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THE ARCHITECTURAL FORUM



JUNE 1921

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THE ARCHITECTURAL FORUM

VOLUME XXXIV NUMBER 6

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ALBERT J. MacDONALD, Editor

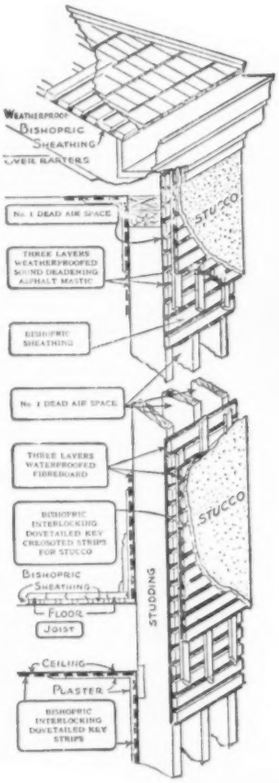
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March 31, 1921

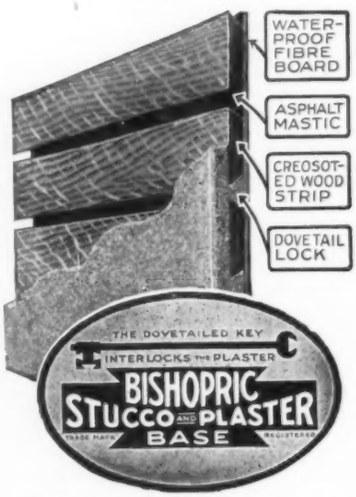
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THE EDITOR'S FORUM

CREATING PUBLIC SENTIMENT

A PUBLIC expression of the thing most needed to revive industrial and business activity, made by Francis H. Sisson, Vice-President of the Guaranty Trust Company of New York, can be applied with particular benefit to the building industry which has been perhaps the greatest sufferer from recent economic conditions.

In an address before the American Institute of Banking, at Minneapolis, on June 16, he said:

"For more than a year the American people have been discounting the future. The time has arrived when they should begin to 'cash' the present. There is ample evidence to indicate that many of the readjustments which we have undergone in the last twelve months have practically been completed, and although there will inevitably be further readjustments in other directions, we are rapidly succeeding in laying a foundation for the revival of business on a sane, sound and stable basis."

Speaking further on the obstacles that stand in the way of a business revival, he said:

"Notwithstanding that there is still considerable 'frozen' credit in this country, the principal economic problem is not the credit situation, although many, especially in agricultural districts, appear to think so. The chief obstacle is the difficulty of developing an adequate demand for goods. Superficial consideration of that problem would suggest that the solution would lie in the readjustment of prices, but lower prices in many lines have not aided materially in stimulating buying. As a matter of fact, in some instances, paradoxical though it may seem, the lower the price the less buying there has been. This curious situation has been due, of course, to the belief generally entertained that practically all commodity prices were certain to recede even more than they have, which has tended naturally to prolong the so-called buyers' strike.

"It would be well, however, for the public to study recent price trends and their underlying factors, for many significant developments are occurring. For instance, the wholesale prices of several basic commodities, such as wheat, corn, sugar, rubber, copper, lead, pig iron, petroleum and timber, increased 2½ per cent last month. That advance marked the end of a steady decline in the prices of these commodities from their peak on June 1, 1920, which represented a fall of more than 54 per cent."

Similar reactions are noted in the building field; while general prices have not shown a rise there is a noticeable stiffening in them. This result is indicated in the chart shown in the Service Section in this number of THE FORUM. Considering that building trades wages are practically stabilized for another year, a point must soon be reached which will be the basis on which farsighted investors will enter the field. This will be the necessary stimulus to push prices up a little, and at that time the general public will take a definite interest. This point is not far off, and architects will be wise to keep in close touch with price movements so they may prepare for the turn in the tide.

BOOK NOTES

ARCHITECTURAL DETAILS FROM WESTMINSTER ABBEY AND ST. MARGARET'S, WESTMINSTER. A collection of 150 plates in two portfolios. 12½ x 16 ins. Phototype illustrations. Text by Albert Edward Bullock. Published in London by J. Tiranti & Co. Price for two portfolios, £4, 4s.

WESTMINSTER ABBEY, from an architectural standpoint, does not arouse enthusiasm equal to that felt for many English cathedrals because of its general leaning to the French mode of Gothic and the excrescences that have gathered about it in the centuries it has existed as the British national monument. Much interest, however, attaches to its details, particularly the type of perpendicular Gothic and the vaulting which covers several periods, among which is the fan vaulting in the Chapel of Henry VII, undoubtedly the finest example in existence.

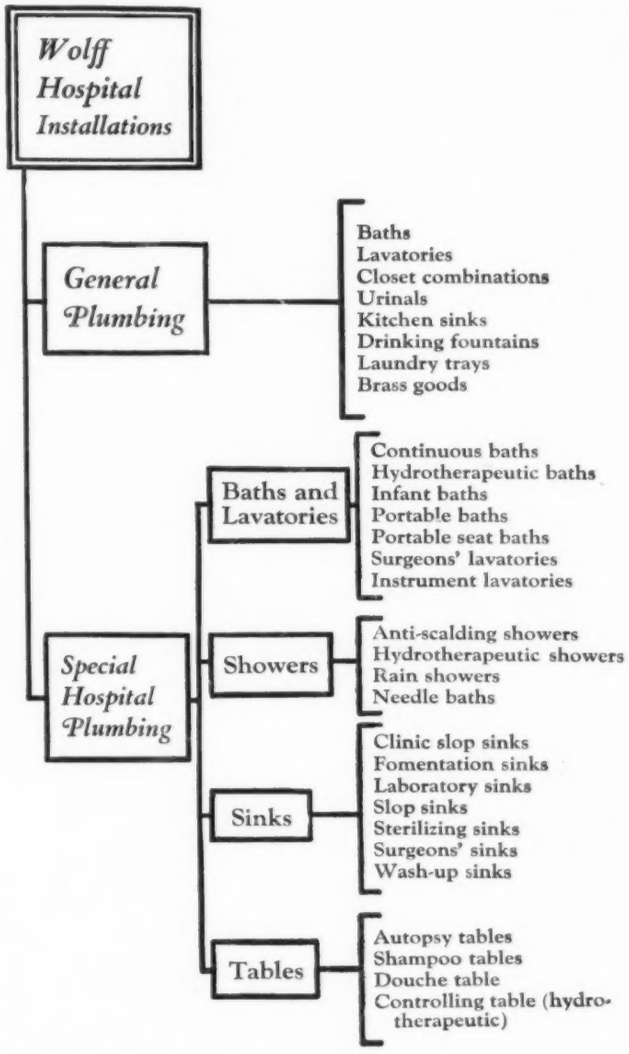
The larger interest in Westminster Abbey is, perhaps, in the monuments and memorials with which it abounds and which represent art from mediæval days to modern times. It is chiefly with these features that these portfolios deal, although there are sufficient illustrations of the fabric itself to give a comprehensive idea of the structure.

The first portfolio illustrates principally architectural sculpture, vaulting, choir stalls and other carved woodwork of the chapels. The second shows the pulpits, memorials, tombs and wall tablets which comprise a record of English art through many centuries. There is a particular interest in these details today because they indicate varying expressions of memorials that are valuable in guiding present-day efforts in monuments to commemorate individuals and deeds of the late war. All of the plates are reproduced from excellent photographs and by a process that makes possible the preserving of the details.

IN the April number of THE ARCHITECTURAL FORUM an article was published illustrating the algebraic method of solving stresses in wood trusses. The principle involved is exceedingly interesting and shows how one may check over trusses on the ground or for a preliminary sketch design when the principal dimensions are known. We regret to say there were some mathematical errors in these calculations, as graphic checking has demonstrated, but these errors do not affect the value of the algebraic solution of the truss problem.

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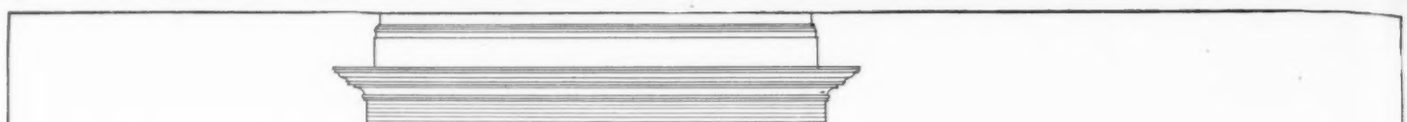
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FIRST CHURCH OF CHRIST
LANCASTER, MASS.
Charles Bulfinch, Architect

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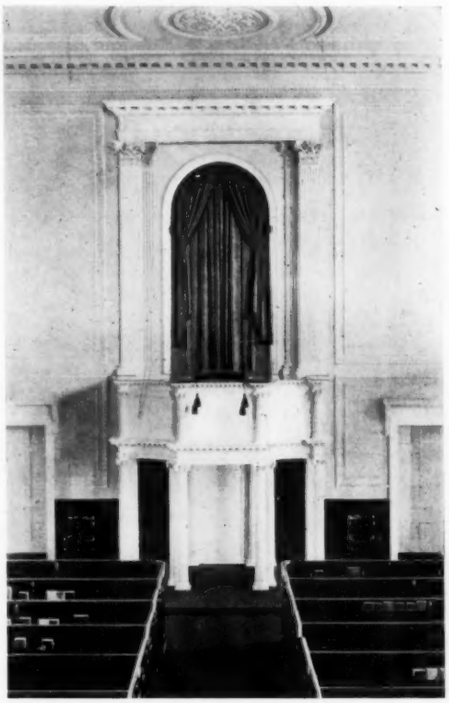
The
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VOLUME XXXIV · JUNE 1921 NUMBER 6

The Bulfinch Church, Lancaster, Mass.

By the REV. CHARLES A. PLACE, *the Minister*
Photographs by the Author

ONE of the charmed spots of beautiful Lancaster on the Nashua is the green. Four buildings face the green—the church, the library, the high school and the town house. No one who has stood in front of the town house on some day of sun and shadow, and looked across the green to the church on the north, will ever forget the beautiful setting. The story of the church, the oldest and finest of the four buildings, appealing alike to the architect and to the lover of the beautiful, is here set down briefly, and as fully illustrated as may be.

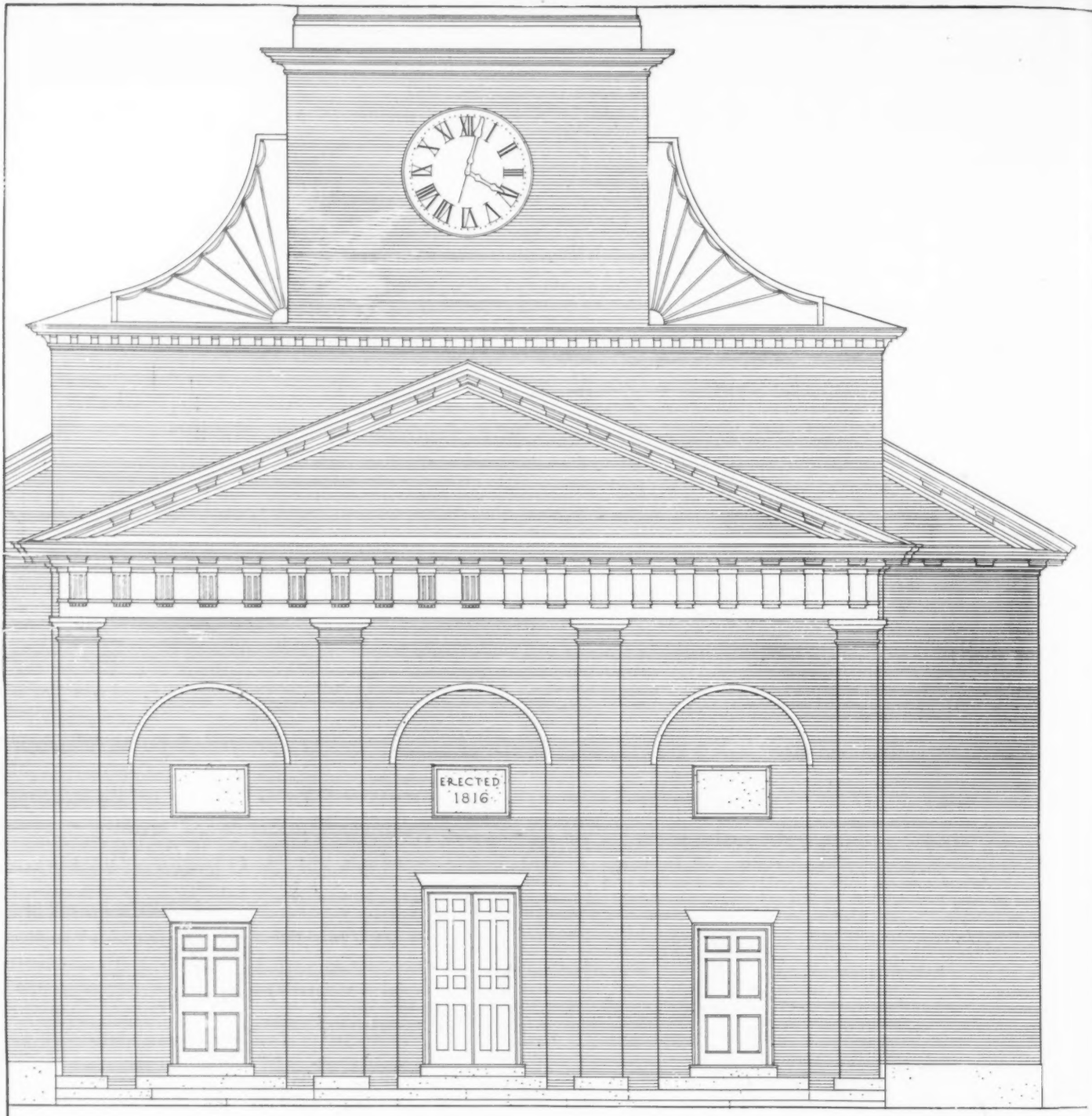


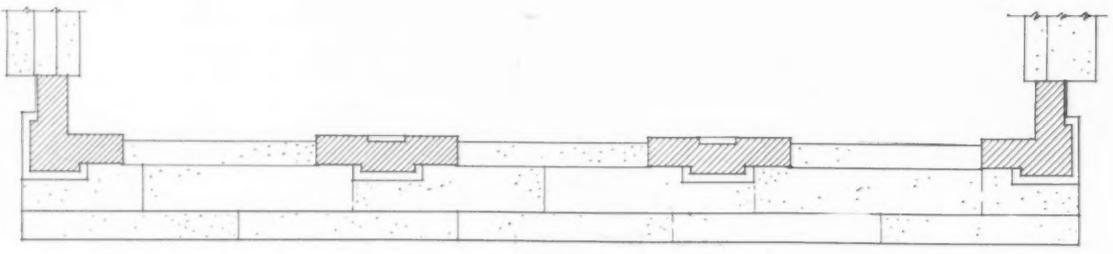
The Pulpit from Organ Gallery

The corner stone was laid July 9, 1816; the building was completed within the year, and dedicated Wednesday, January 1, 1817. The sermon was preached by the Rev. Nathaniel Thayer, D.D.,— the minister of Lancaster, whose descendants today constitute a very influential part of the town and congregation. The cost, approximately $20,000, was ordered by vote of the town and assessed on the pews. The edifice is of brick from plans of Charles Bulfinch of Boston, and is without doubt the finest proportioned of all his churches, though with an interior less elaborate and costly than the New South which formerly stood in "Church Green," Boston, — corner of Summer and Bedford streets. It was reared almost wholly by artisans of Lancaster,—a noble memorial to their skill and integrity,—of Lancaster brick in Flemish bond, Lancaster timber, and of the celebrated Bolton lime. In size it is 74 by 67½, with a porch or vestibule 49 feet in width, projecting 19 feet, and a portico 4 inches less on each side in width, and projecting 17 feet. It stands today almost exactly as built, and practically as sound. A Roman Doric cornice is well executed, having bored mutules. Measured drawings are shown of the portico, the cupola and of certain interior details.

The tower and cupola are deserving of long and careful study. Suggested in Holy Cross, 1803, and the New North, 1804, Boston, the result here is wonderfully fine. It will be noted from the picture that the angles between the tower and porch attic are decorated with fan-like ornaments. The cupola is surrounded by twelve Roman Ionic columns, supporting a well balanced entablature. An interesting feature, and suggesting old Roman construction, is seen in the lines of the dome. The total height from the ground, including the vane, is 118 feet. In the cupola hangs a Revere bell, which, recast on account of some defect, bears the date 1822. It would be difficult to alter any line of the cupola without impairing its balance. Comparison of its proportions with those of the choragic monument of Lysicrates, increases our appreciation of Bulfinch's lines.

The facade and tower treatment bear witness to the influence of Bulfinch's trip abroad. Directly or indirectly, he drew from the best examples of the past. The arcaded portico, with its touch of the classic art of Italy, has a charm beyond what a picture or description can suggest. The treatment of the three doors is simple, all having beaded frames





PLAN

SCALE
1/8" = 1'-0"

CHARLES
BULFINCH
ARCHITECT

ELEVATION
FIRST CHURCH OF CHRIST
LANCASTER MASSACHUSETTS

AFTER MEASURED
DRAWINGS BY
BIGELOW & WADSWORTH
ARCHITECTS



FIRST CHURCH OF CHRIST, AT LANCASTER, MASS.

BUILT FROM DESIGNS BY CHARLES BULFINCH IN 1816

and a 1½-inch round moulding in the angles of the frames and masonry.

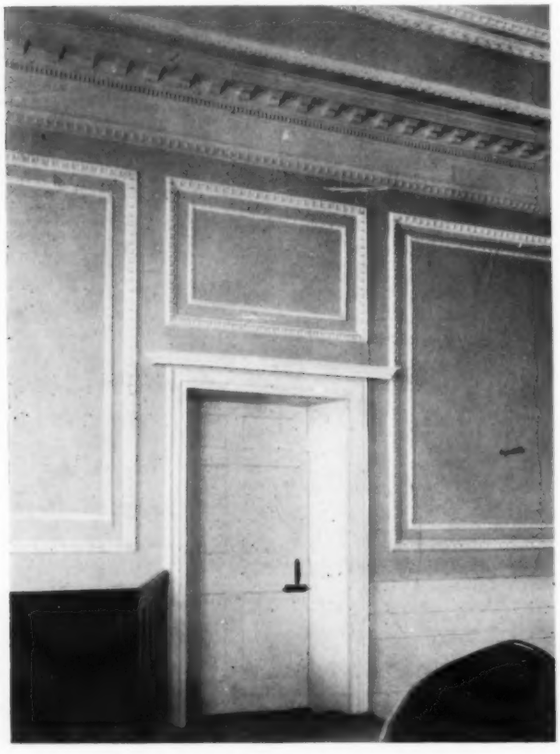
The porch or vestibule has a distinctly New England spirit, with the dignity and plainness of a New England meeting house 50 years earlier. There are touches of beauty here, but they are few and not what the exterior leads us to expect. Two staircases bend in and meet halfway in a common landing, under which the congregation passes to the middle inner door; a broader staircase ascends to the upper floor, passing from thence to right or left to the galleries, or up a narrow flight of stairs to the belfry.



View in Porch on Church Front

On passing from the porch into the church we come upon beauty fully worthy of the best of the exterior. The interior which meets the eye, with the exception of the ceiling and wall ornamentation and certain changed details in the north end, is the same substantially as when finished in 1816. In 1881 the Thayer Memorial Chapel was built, connecting with the church, necessitating the cutting of two doors, the closing up of the arched window back of the pulpit and the removal of four pews on each side of the pulpit. Two windows each side of the pulpit, on the lines of the lower and upper rows of windows, eight in all, had been closed at some earlier date. In the gallery a few changes were made when the organ was installed. Otherwise the seating is as originally planned.

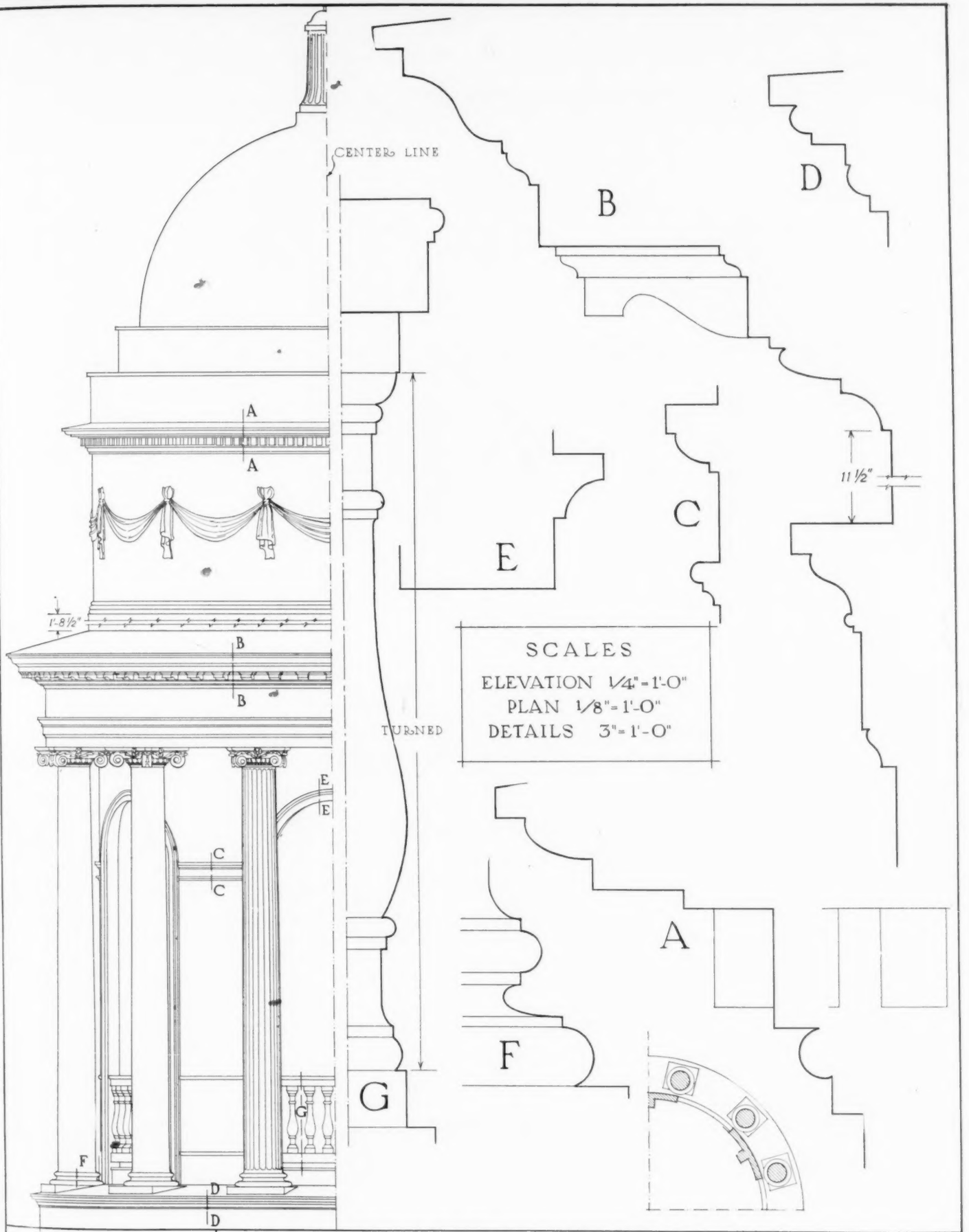
In 1869 a proposition was made to run a floor on the level of the gallery floors, thus converting the structure into a lower vestry and an upper church. This was in line with what actually happened in so many New England churches, but would have been little short of vandalism. The beautiful pulpit would have been lost, and low-



Wall Treatment and Doorway to Vestibule



Stairways to Gallery from Vestibule

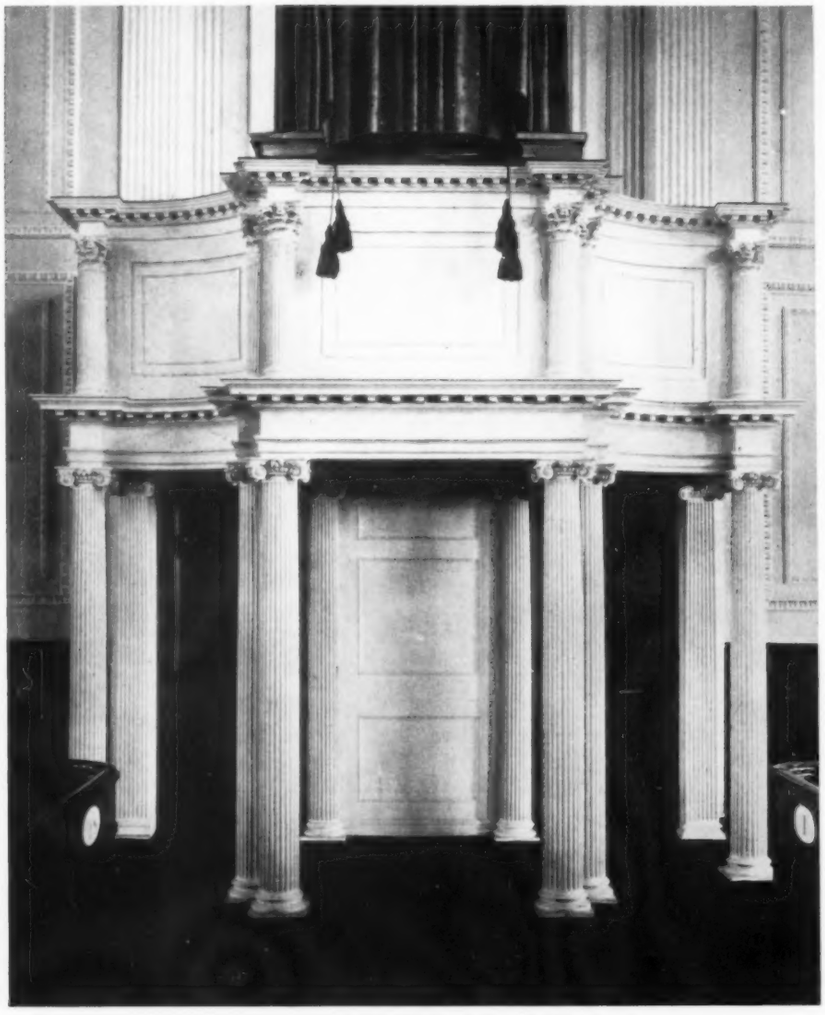


CHARLES BULFINCH
ARCHITECT

UPPER PORTION OF TOWER FIRST CHURCH OF CHRIST
LANCASTER MASSACHUSETTS

AFTER MEASURED DRAWINGS BY BIGELOW & WADSWORTH ARCHITECTS





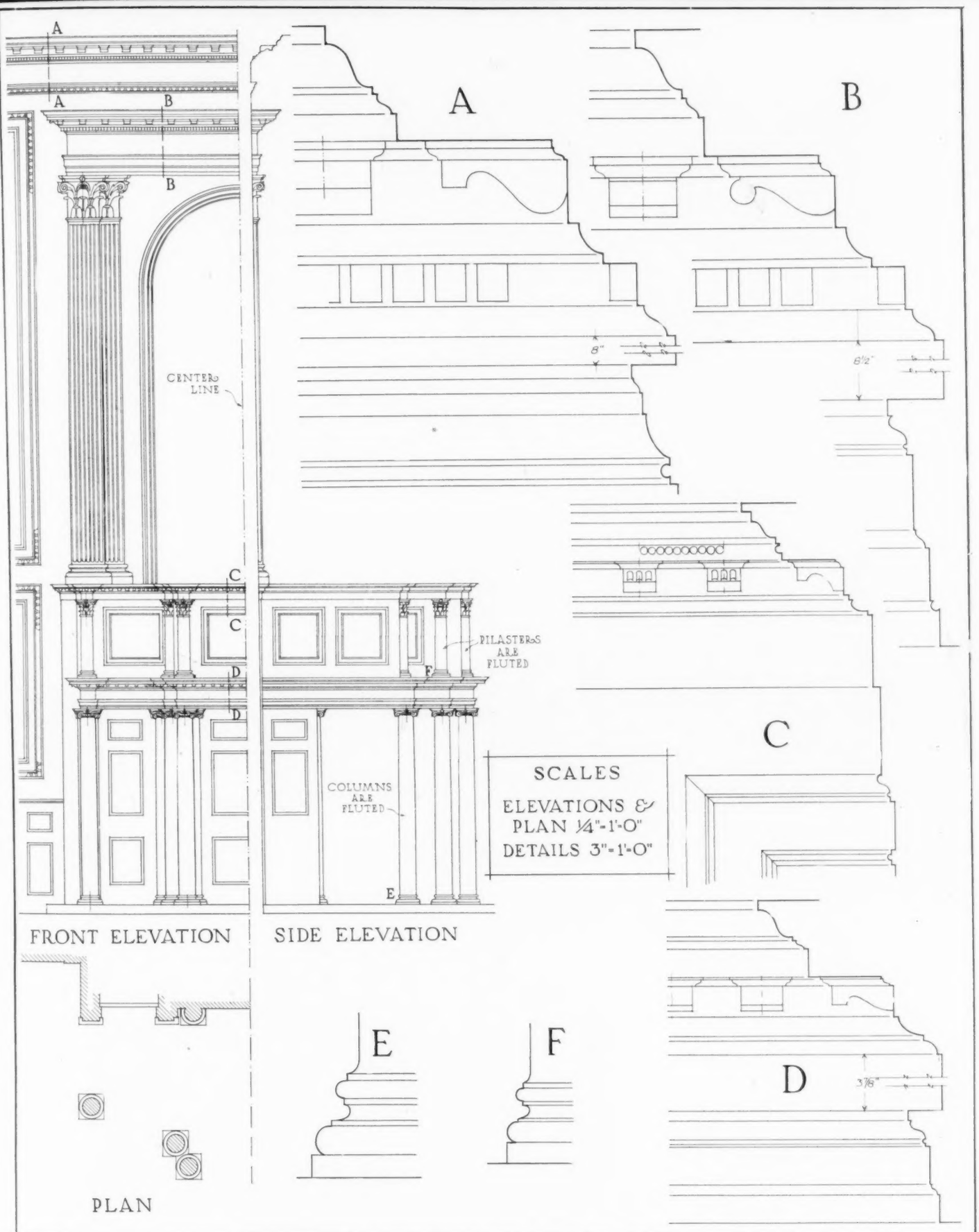
Detail of the Pulpit

studded utility rooms would have taken the place of the present beautiful interior. To the courageous and vigorous stand of the minister, Dr. George M. Bartol, the church is everlastingly indebted that the plan was abandoned. At that time the interior was redecorated.

There is no picture of the interior of the church prior to the changes made necessary by the erection of the chapel. What Bulfinch would have done with the wall and ceiling treatment, had he been given a free hand without the hampering necessity of economy, may be imagined from a study of the State House, Boston. Certainly the walls and ceiling in 1816 did not harmonize with the galleries, pulpit and other details, and decorating in 1900, while not Bulfinch's, are quite in keeping with the rest of the interior and what Bulfinch completed elsewhere. Some of the moulding designs used in 1900 are to be found in the State House, Boston, and in St. Stephen's Church, Wallbrook, London, which Bulfinch admired, and are quite in keeping with his good taste. An illustration of the ceiling is shown and another of one of the gallery doors, showing wall mouldings and detail of the cornice. The gallery is supported by fluted columns with Roman Doric capitals, with no bases, 10 feet 11 inches high and well proportioned. The gallery is enclosed with an open balustrade, so called, and curves in toward the south end. An illustration is shown looking toward this south end. At present there is no way of artificially lighting the church, and the old method of heating it with two stoves is still in use. The pews are made of pine, stained cherry color, and the numbers on the doors, at one time covered, have been restored. Side pews, 4 x 8, suggest the old style "box pews," while those in the middle of the church, 3 x 10, are usually called "slips." The windows have inside blinds. The two busts at the south end in one illustration are of Dr. Thayer (1793–1840), and of Dr. Bartol (1847–1906), and were executed by Bela Pratt.

Of the pulpit, much should be said, or very little. Two illustrations are here shown and also a measured drawing. The pulpit should be seen and carefully studied; then the judgment of architects well qualified to pass upon it would be confirmed, that no more beautiful pulpit of its type exists in America. Not only is the proportion of width to height well nigh perfect, but it possesses lightness and grace to a high degree. The only change in this design from the original is the removal of the arched window which was covered with "a rich green curtain of figured satin and velvet with a ball fringe roping and tossel." The present curtain is red damask. The pulpit stands on a platform 4 inches high, with Ionic columns 6 feet 5½ inches high. The total height from the platform is 10 feet 8 inches. It is painted white. The paneling and two mahogany doors enclose a 25-inch space which originally contained stairs,—the only way of entering the pulpit until the chapel was built in 1881.

This description would not be complete without some reference to the architect and the artisans who made this beautiful building possible. That

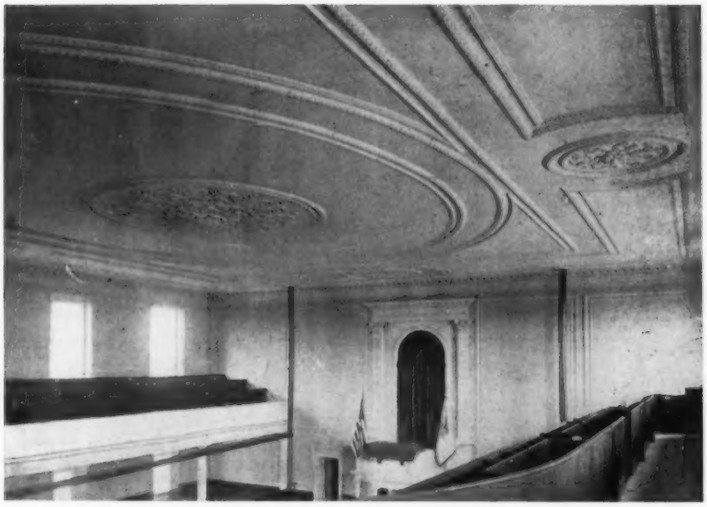


CHARLES BULFINCH
ARCHITECT

PULPIT AND INTERIOR CORNICE FIRST CHURCH OF CHRIST

LANCASTER MASSACHUSETTS

AFTER MEASURED DRAWINGS BY BIGELOW & WADSWORTH ARCHITECTS



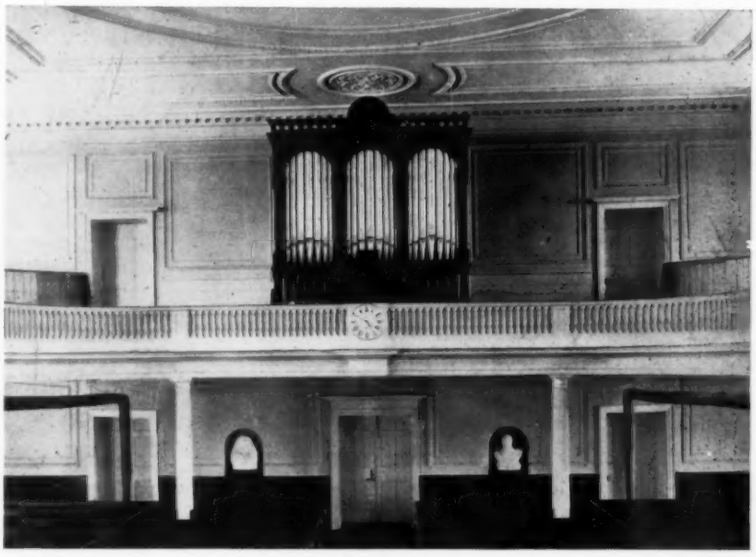
Recent Ceiling Enrichment in the Bulfinch Manner

Charles Bulfinch was the architect is beyond question, though his name does not appear on the town records. This church is listed by Bulfinch, and he is also credited with its design in a newspaper report at the time of dedication. Why he should have been chosen to design the church is not hard to determine. Almost every man who was chosen by the town to aid in procuring land, to consider plans, or to form the building committee, was or had been a member of the General Court, and so had ample opportunity to see the wonderful Bulfinch State House and its exquisite interior finish. The building committee consisted of Eli Stearns, at the General Court 1806–10, Jacob Fisher, 1811–13, and William Cleveland, 1813–15. Eli Stearns was a local carpenter and builder, and a first class workman, as more than one Lancaster residence, now standing, attests. Jacob Fisher was a cabinet maker and a progressive business man, and possessed of rare skill with tools. Doubtless his hand carved the pulpit. It is a splendid work in every detail. There is a story about "Jacob Fisher and the Twelve Apostles" based on the tradition that Jacob Fisher gave twelve columns for the church. These undoubtedly were the eight columns and the four pilasters under the pulpit, and would thus naturally connect his hand with the pulpit and its carving. William Cleveland, a man of taste and refinement, born in Salem 1777 and coming to Lancaster in the early part of the nineteenth century, must have seen something of the wonderful work of McIntire, who died 1811, and hence was an ardent inspirer in choosing the Bulfinch plan and carrying it to execution.

There is no record of Bulfinch's ever being in Lancaster. Someone, therefore, must have interpreted the simple plans which he drew. That someone, it would seem, was "Captain Thomas Hersey, master builder," according to the town records. Hersey, who was not a resident of Lancaster, received $500. That is all we know. Who he was or where he came from is not known. Was he connected with Bulfinch in other work,—the New South Church, Boston, erected 1814, the McLean Asylum buildings, opened in 1818, or the two buildings for the Andover Theological Seminary, 1817–18? These are questions yet to be answered, upon which no clue has been found.

Undoubtedly the plan of the church, its exterior lines,—the portico, the tower and the cupola; the interior arrangement,—the lines of the gallery and the design of the pulpit, were by Bulfinch. The execution of this plan was due to men who knew the principles of construction and the uses of tools, and who built with integrity and on honor. All high praise to those early artisans who wrought themselves into this enduring monument, as well as to him whose mind conceived its beauty.

While much of the best work of Bulfinch has fallen before the unceasing march of change which is common in American cities, enough remains to bear eloquent testimony to his rare taste and to his keen understanding of the value of proportions and the refinement of detail.



Church as Seen from the Pulpit

Architecture and the Automobile Industry

By WIRT C. ROWLAND

Of the Office of Albert Kahn, Architect

A TREMENDOUS impetus has been given to building, during the last 20 years, by the development of the automobile industry. Among those professionally interested in architecture to say this is not enough, for this industry, by reason of its special requirements, has given opportunity for the creation of a distinctly modern type of architectural design. Until recently this type has been characterized chiefly by a certain lack of grace, outline and color, and often a complete absence of pleasing proportion, obviously not the deliberate choice of the designers.

If a fanatical economy and a frenzy of practicability have produced such a result, so carefully, and often effectually, avoided in the designs of motor cars themselves, the opportunity affords a test of our ability as architects to cope with the difficulties of modern requirements, and,— by its faults, — it gives proof positive that we have not advanced abreast of the science of industry and invention, the problems of which we deal with.

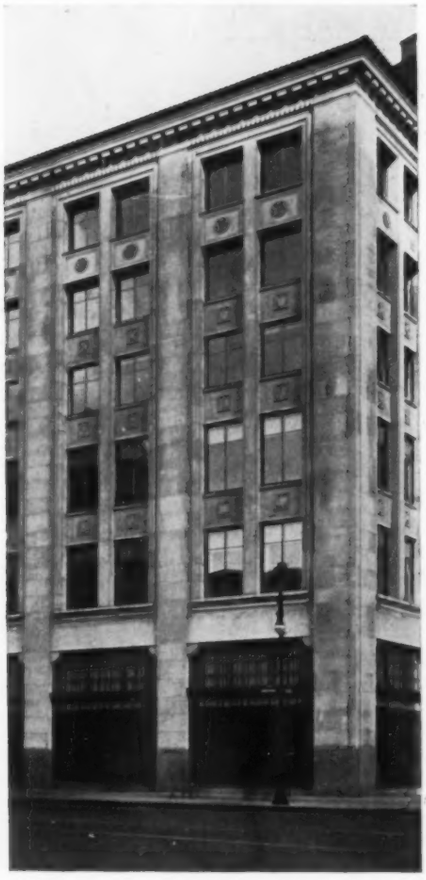
The expansiveness and looseness which have characterized our architectural thinking, the yearning to be free from all restrictions, — these have been our inheritance from preceding generations of romantic thought and philosophy. The commercial and industrial problems have, by their difficulties, brought to us the compelling exercise of discipline. Therein lies the chief value of such a type of architecture, be the exercise never so distasteful and the result never so rigid and artistically unsatisfactory.

The beginning of the manufacture of motor cars in this country was almost simultaneous with the practical application of the concrete frame to building, a form of construction commended to the manufacturer and his architect by its economy and simplicity of erection. It is hard to say which has been the more dominant factor involved in these problems, — the arbitrary requirements of the manufacturer or the rigid form of concrete construction, — but in both we recognize the necessary agents of discipline, and we may be grateful to them for having turned us to real thinking.

A substantial element in planning these buildings has ever been a demand for unusual light. It is that in these problems which has brought into use the slender piers and the tremendous areas of glass, so difficult to be made to assume any semblance of architectural form. These, with the customary planning of the structural features in a system of bays, have limited the treatment to a more or less awkwardly connected sum of units, the chief opportunity being the careful adjustment of the proportion of piers and spandrels and as interesting a treatment of the surfaces of each as cost may permit.



Two of the Four Wings, Durant Building for General Motors Co., Detroit



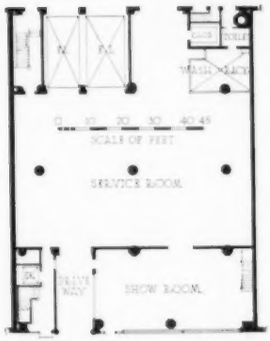
Detail of Ford Sales Building, New York



"Modern" Sales and Service Building, Detroit



First and Second Floor Plans of Ford Building, New York



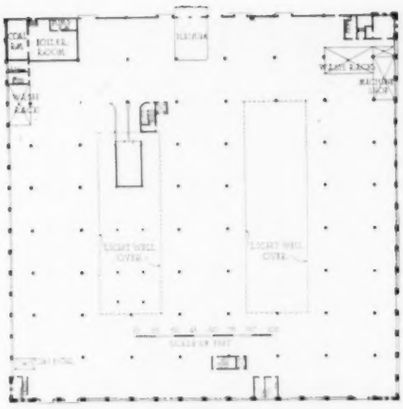
Main Floor Plan of "Modern" Garage

The so-called unit system has further prevented these buildings from assuming any sort of completeness, because they are generally arranged so they may be built upon and extended, story by story and bay by bay, without substantially altering the character; for indeed they do not seem to begin or to end definitely. It is this characteristic, more than any other, by which we may identify those buildings used for the manufacture and sale of automobiles. Today we find such difficulties only partially overcome where more pier space is allowed at the corner, or perhaps a whole pylon and a parapet which can be of more adequate proportions.

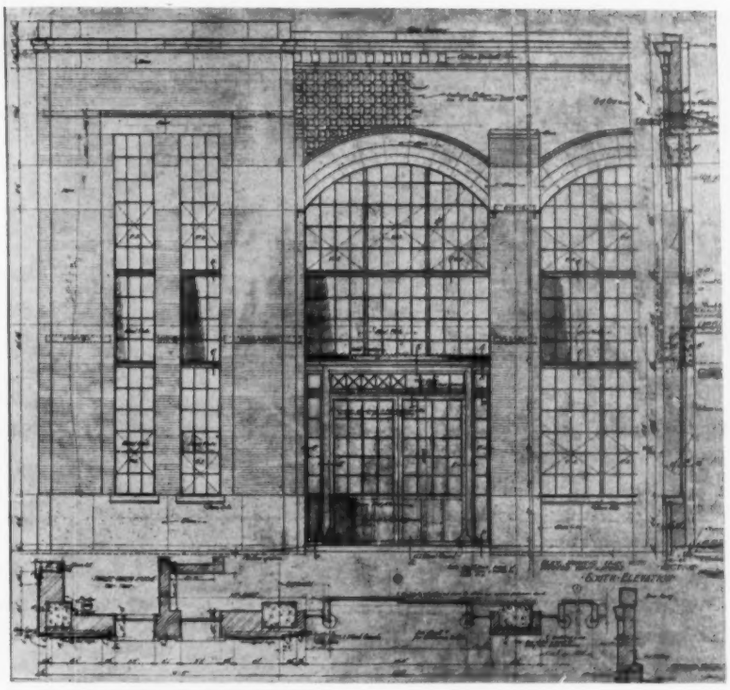
Nothing, however, has more happily contributed to the general organic effect than the opportunity of introducing smaller intermediate piers for mullions above the voids of the first story, particularly when the voids may be given an agreeable shape and proportion. Then we find ourselves, with the exception of opportunities presented by detail, at the end of any possible progression.

Economy has been a vigorous censor of elaboration in these buildings, and has restricted the kind of material and prescribed limits in detail. Those stern beginnings, with scarcely more than projecting bands to intrigue the interest, have taught us to rejoice at the present day in the use of the more plastic clay materials, brick and terra cotta, and the possibility of a scale of detail attainable by them. Brick was at first used in elaborate patterns because of the necessity of giving some interest to otherwise ugly proportions of pier and spandrel. It now fulfills its more useful function of giving its due color in the design, contrasted occasionally with simple bands of stone, or sparingly used in small surfaces of diaper patterns and projecting cornices and simple dentils. A solution for the crowning piece of detail, the cornice, has thereby been offered, suitable for the factory or service building of more modest architectural pretensions—a solution offering much variation of scale and elaboration.

Within the last few years there has come into demand, for the first time on the part of the motor industry, that which calls for a more architectural



Main Floor Plan



Detail of End Pylon and Bay, Packard Service Building

treatment—the service and sales building of an elaborate character. A clay material does not seem to have met the demand in either color or texture, hence we now obtain successful results with the light color and texture of stone facing, after a use of more than 20 years of concrete, a material which, however cleverly contrived, was never artistically acceptable to architects or owners.

The use of stone has effected much change in the designing of this industrial work and has imparted a character ever identified with a most dignified building material. It has made possible a general refinement, a freer contour, and an opportunity for modeling not found in other materials, and its necessary use in large courses of thin slabs has by no means reduced its interest but has given a certain distinction by providing a surface comparatively unbroken by joints and revealing, as never before, the beauty of its warm, gray surface. In this material, carved ornament of an appropriate character may add a human touch, a need often felt in buildings where the lines are otherwise rigid and geometrical.

From start to finish, from concrete to stone, and under pressure of requirements both practical and structural, the architect has felt the need of nothing so much as of a reasonable precedent for the entire range of industrial work—that is, to speak of the architect who is not literally obsessed by the idea of a new architectural style. Perhaps, on account of the apparent lack of this precedent, there has been more thinking, more going back to structural and organic elements, always a healthy exercise in any art, and particularly in architecture. As far as architecture is concerned, any attempt to revivify it otherwise miserably fails, and most signally so when any effort is made to change its outward forms without attention to its inner principles.

We must invest our work with those prin-



Packard Service and Garage Building, Chicago



DETAIL OF PACKARD SERVICE BUILDING, DETROIT



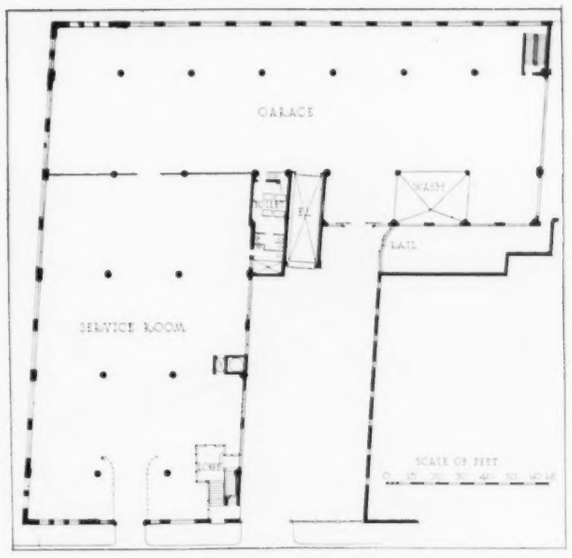
DETAIL OF FORD SALES AND SERVICE BUILDING, DETROIT

ALBERT KAHN, ARCHITECT

ciples, and if buildings for commerce and industry, particularly those in connection with automobile manufacture, have shown progress and thought, it has not been through any desire to create a new type, but through the application, from problem to problem, of those essentials which are incorporated in the great architecture of the past.

A reluctance to follow any but an outward form as a precedent in these industrial problems results in inevitable failure. History furnishes us, however, a rich store of precedent for analysis which must be broad as well as minute, and the opportunity to study scale, treatment of surface, profile and line is no greater than that of studying broad masses and groups of piers. For these we may look among the examples of Lombard Romanesque. Then, too, we cannot remain unaware of the many lessons to be learned from the Gothic—of the relation of tall openings to buttress piers. In these two styles there is much material for study, not to say inspiration, especially for that part of our industrial work to be built in brick or in brick and stone. The possibilities for giving actual charm and interest of detail are limited only by a sense of propriety.

With respect to historical precedent, our attention is again drawn to our opportunities to build in stone. With 20 years of experiment behind us, we have rubbed elbows with every difficulty under the sun, and what can and what cannot be done with practical requirements is pretty well known. We have felt the restrictions keenly and it is with real satisfaction, in spite of them, that we may turn to such a material capable of giving us line and beauty of detail, for the inspiration of which we find no style so replete as that of the classic in its range from Greek to Georgian.



Principal Floor Plan of Building Below



Packard Service Building, Detroit



Ford Sales and Service Building, Highland Park, Detroit



Main Floor Plan

It is true that, for some time previous to this industrial development era, certain modern masters used the classic style for structures almost similar to the automobile service building. Their success was only partial, because their sympathies were not with modern ideas and modern requirements, and their interest was not in the actual solution of commercial problems, however masterly their knowledge and use of classic forms. But we must bear in mind that a success equal to theirs, not to say a development beyond their achievement, must be attended by the same measure of devotion to study and the intimate understanding which they possessed.

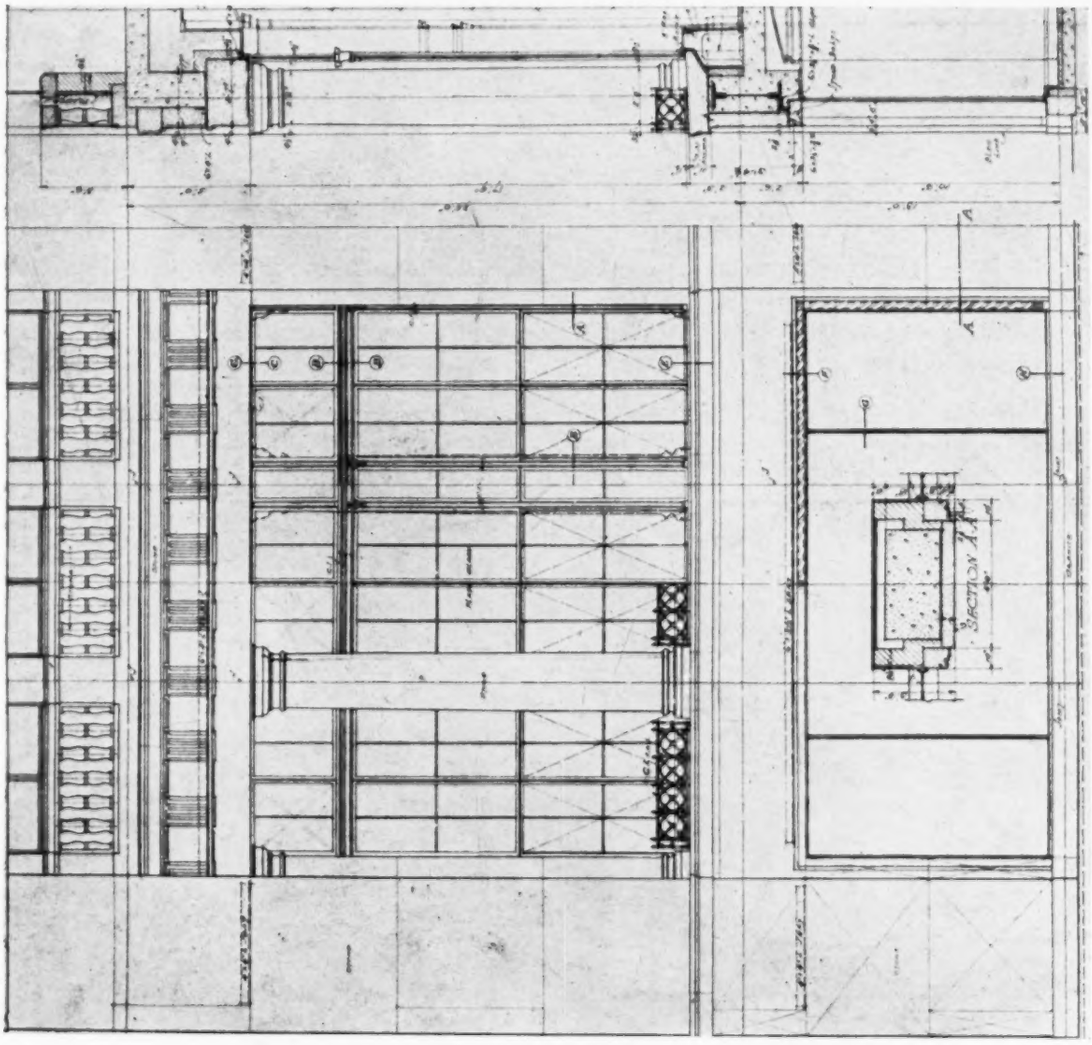
By the use of stone, an opportunity—not an assurance of success—has been given us. Here is an opportunity of using the underlying principles of architecture with an actual knowledge of its forms, for a superficial, drafting-board code of the classic orders will not suffice, nor will any other ideal based on fine sketches only.

One becomes aware of a danger which accompanies the solution of the modern industrial problem. The cleverness which has been engendered by the effort to make our buildings of architectural interest with such limited means tends to overbalance those fundamentals which we have learned in dealing with organic members. Classic form is not susceptible to this cleverness; it is too impersonal and too universal, — that is why it finds such substantial and enduring favor. Its use in the problems which are distinctly modern is modified not only by practical and economic restrictions, but also by its own very principles. It is not the clever adaptation of its parts to a modern frame work, but an actual dismemberment and a building up again according to those principles, which will create and endure.

Deploring, as he may, this commercial age, the architect who would appreciate the possibilities of present-day problems must first strip his ideas of architecture down to the very skeleton. His view of history and tradition must exclude the unessential, and magnify only those vital periods when structure and beauty were developed at the same time and exerted an influence upon each other. Our modern industries permit somewhat the same opportunities for beginnings of architectural development, and for the exercise of just such skill, though such efforts in this department of human endeavor may

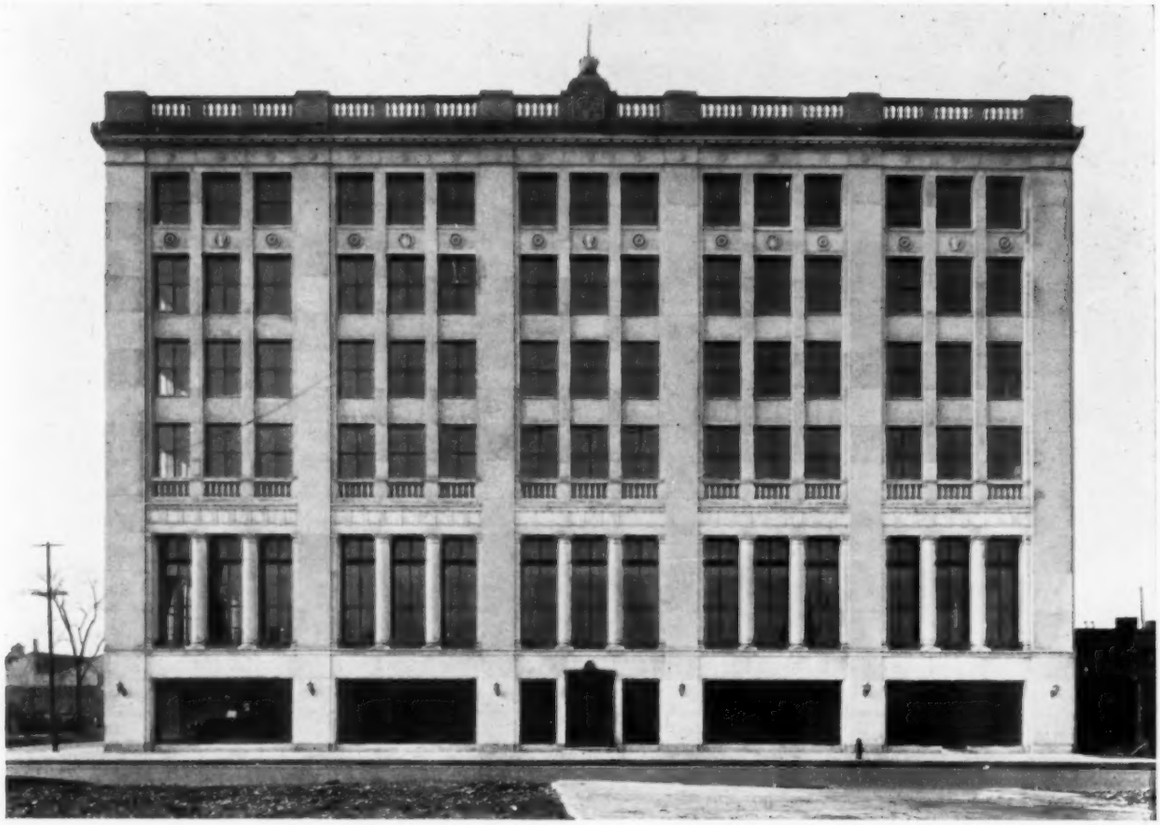


CENTRAL BAY OF MAIN FACADE



ELEVATION AND SECTION OF TYPICAL BAY AT LOWER FLOORS

SALES AND SERVICE BUILDING FOR THE CADILLAC MOTOR CAR CO., DETROIT. ALBERT KAHN, ARCHITECT



Main Facade of Sales and Service Building for Cadillac Motor Car Co., Detroit

not compare ethically with impulses or forces which produced Greek temples or Gothic cathedrals.

Not the least among commercial forces, the automobile industry has given commissions to erect building after building, hardly varying in demands of arrangement, thereby offering the opportunity to perfect by repetition and constant experiment. It has, by its commercial ideals, forced us to eliminate elaboration and to conform, in our architectural expression, to structure, thereby disciplining us in the sole use of essentials. It is not possible to predict great things from the motion of a force so unethical and so material, but many believe in the salutary effect of training which the solution of its problems must have upon men who may have opportunity of expressing a more lofty, human ideal.



First and Second Floor Plans



VIEW OF MAIN FACADE

SERVICE AND SALES BUILDING, CADILLAC MOTOR CO., DETROIT, MICH.

ALBERT KAHN, ARCHITECT



GENERAL VIEW

SALES BUILDING, FORD MOTOR COMPANY, NEW YORK, N. Y.

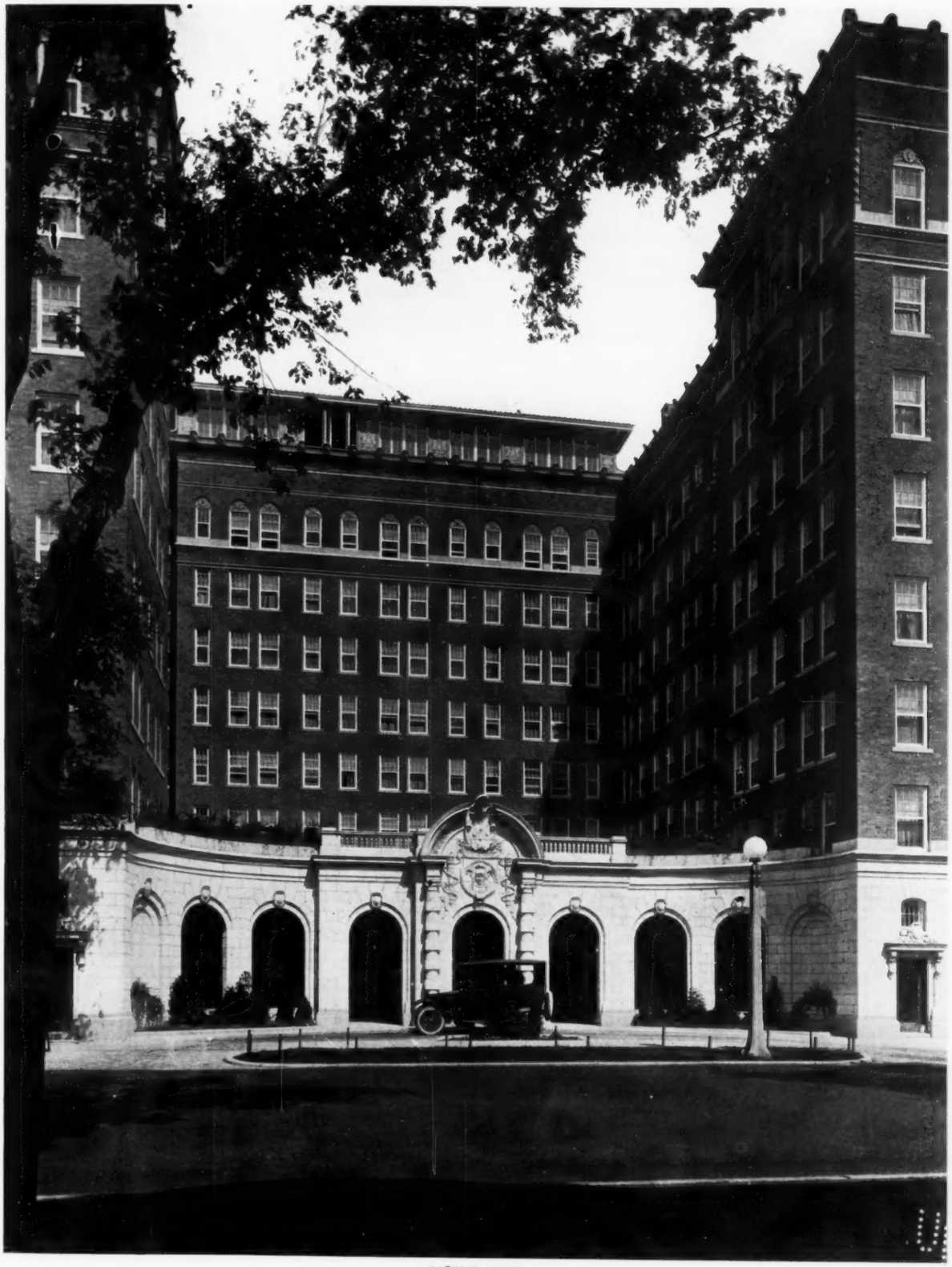
ALBERT KAHN, ARCHITECT



MAIN ENTRANCE

SALES BUILDING, FORD MOTOR COMPANY, NEW YORK, N. Y

ALBERT KAHN, ARCHITECT



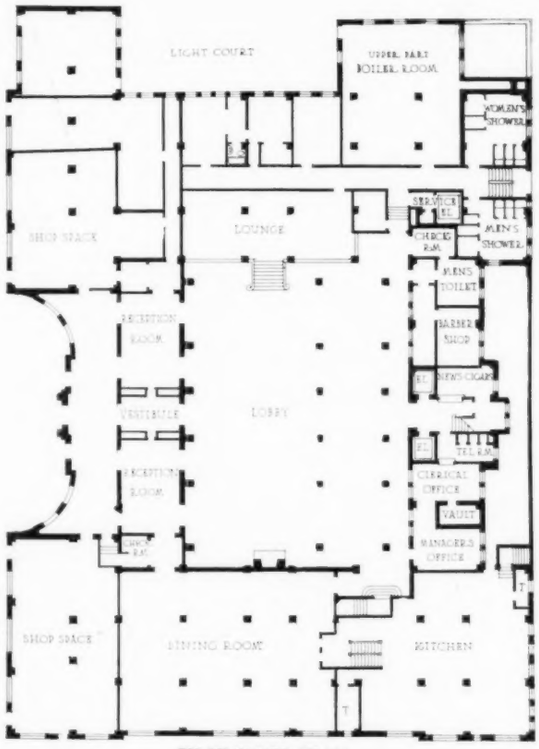
COURT VIEW

HOTEL SOMERSET, CHICAGO, ILL.

S. N. CROWEN, ARCHITECT



GENERAL VIEW



FIRST FLOOR PLAN

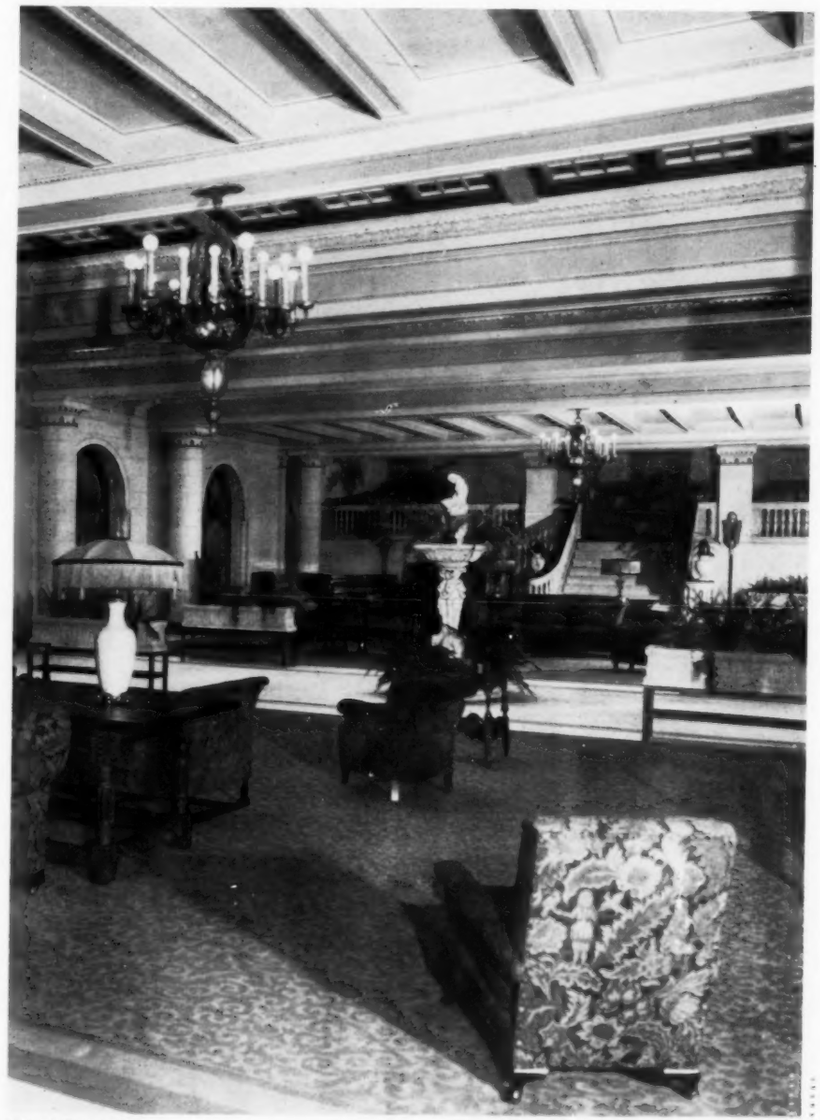


TYPICAL FLOOR PLAN

HOTEL SOMERSET, CHICAGO, ILL.

S. N. CROWEN, ARCHITECT





VIEWS OF DINING ROOM AND LOBBY

HOTEL SOMERSET, CHICAGO, ILL.

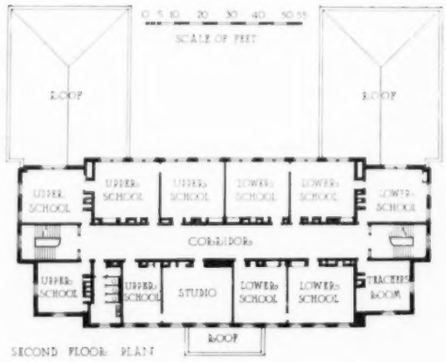
S. N. CROWEN, ARCHITECT



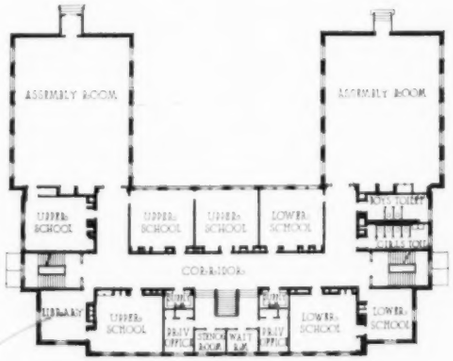
DETAIL OF END

GIRLS' SCHOOL AND LOWER SCHOOL, MILTON ACADEMY, MILTON, MASS.

GEORGE F. SHEPARD, ARCHITECT



SECOND FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR PLAN



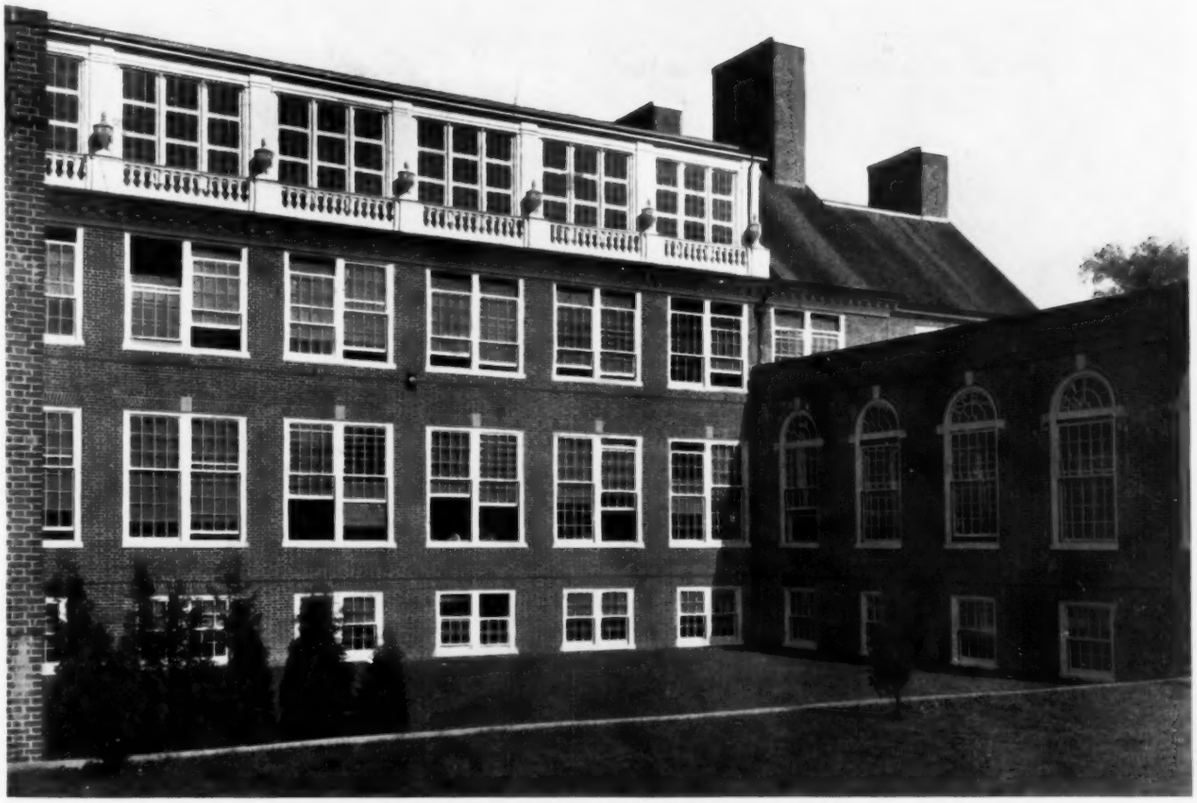
DETAIL OF MAIN FACADE

GIRLS' SCHOOL AND LOWER SCHOOL, MILTON ACADEMY, MILTON, MASS.

GEORGE F SHEPARD, ARCHITECT



GENERAL VIEW



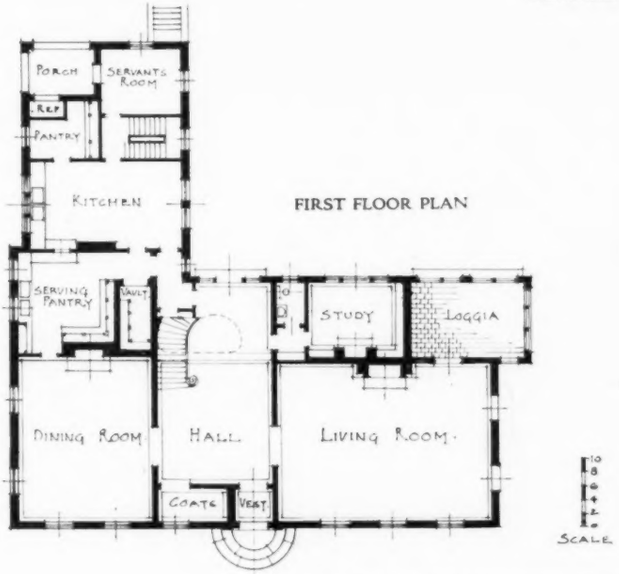
REAR COURT, SHOWING THIRD FLOOR OPEN AIR ROOM

GIRLS' SCHOOL AND LOWER SCHOOL, MILTON ACADEMY, MILTON, MASS.

GEORGE F. SHEPARD, ARCHITECT



GENERAL VIEW



FIRST FLOOR PLAN



SECOND FLOOR PLAN

HOUSE OF ALLAN SHELDEN, ESQ., DETROIT, MICH.

STRATTON & SNYDER, ARCHITECTS

ENGINEERING DEPARTMENT

Charles A. Whittemore, *Associate Editor*

Steel Construction

PART III. PLATE GIRDERS AND COLUMN BASES

By CHARLES L. SHEDD, C.E.

STEEL plate girders are used when the loading is too great for single beams. Fig. 10 shows a typical plate girder. The angles and plates at the top and bottom are known as the top and bottom flanges, while the vertical plate between them is called the web. The vertical angles are known as stiffener angles. Under them, next to the web, are filler plates. Web splices are shown at *a* and *b*. If the plate girder is supported by a column it is best, unless the girder is small, to rest it on the top of the column with stiffener angles over the column section as shown in Fig. 10, even if the column continues up above the girder. A plate is carried down on the back of the end stiffener angles, along the column, to make the structure more rigid and to reduce the eccentricity in the column as much as possible.

When the girder deflects it necessarily puts more load on the inside than on the outside of the column, and more rivets are necessary in the stiffeners over the inside of the column than on the outside. The figure shows two stiffeners on the inside and one on the outside of the girder over the column. These stiffeners must bear firmly against the lower flange angles, and the column below must be planed so as to bear smoothly against its cap plate. Connection angles are provided under the cap plate, and stiffeners on the inside of the column if double stiffeners are used on the girder over the inside of the column. These stiffeners always have filler plates under them. If there is a column above they must also bear against the top flange angles firmly, and the column above must be planed to a smooth bearing. In planing the columns care must be taken that this planed surface is accurate and at right angles to the axis of the column, the same as when one column bears on the top of another.

The figure shows the girder carrying another column a short distance from the column below. Stiffener angles must be provided under this column with filler plates, and the stiffener angles must bear firmly against the top flange angles; the column above must be planed accurately, similarly to those at the end.

The stiffener angles at the end must have enough rivets to take the reaction of the plate girder. When there is no column of any size above that below, as is shown in Fig. 10, it is good practice to provide enough rivets in the stiffeners on the inside to take $\frac{2}{3}$ of the load and enough rivets in the outside stiffeners to take half of the load. The stiffeners under the column above should have enough rivets to take the load from this column into the web of the plate girder.

Directly across the web the plate girder is subjected in a vertical plane to shear only. At an angle of 45° it may be subjected to either tension or compression. In a horizontal plane it is subjected to shear. In Fig. 11 are shown two dotted strips, *a* and *b*, at 45°. The strip *a* would be subjected to tension and the strip *b* to compression. These conditions, of course, are continuous the whole length of the plate girder and in a symmetrical arrangement each side of the zero shear point which is, in a symmetrically loaded girder, at its center.

The reader can actually see this compression and tension in the web if he will construct a plate girder out of cardboard, and cut slots as indicated in Fig. 11 along the dotted lines. After he applies the load the strip *a* will be found to be tight, whereas the strip *b* will be found to be loose and will buckle.

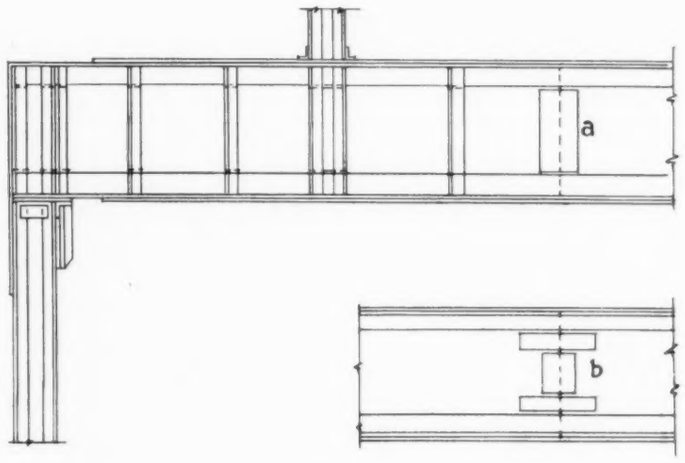


Fig. 10

To prevent this buckling tendency intermediate stiffeners, such as those shown in Fig. 10, may have to be used. These stiffeners may be with or without filler plates and need not be made to bear against the flanges. When there is no filler plate they are said to be crimped over the flange angles. The amount of compression in a strip such as *b* is proportional to the shear in the plate girder's web; its tendency to buckle depends on its length and the thickness of the web, besides the shear per square inch on the web. If the clear distance between the flange angles is too great, stiffeners should be provided to reduce the length of these little columns. They are not true columns, due to the fact that each strip is braced to a certain extent by the metal to either side of it so that the formulae used to determine the spacing of these stiffeners vary even more than those for columns. It would be useless, in this article, to attempt to discuss the relative merits of these formulae.

When the plate girder is too long, say over 30 feet, it may be necessary to splice the web. In Fig. 10 are shown two methods of splicing the web, *a* and *b*. The form *a* may or may not take into account the bending which the web resists. It is common practice to include ⅛ of the area of the web with the flange area in designing the flanges. Whether this allowance is made or not, the web actually does resist bending to a certain extent. Some engineers in designing a web splice as shown at *a*, Fig. 10, do not consider this bending. In the *Engineering News-Record*, Vol. 84, page 949, Mr. Edward Godfrey claims that this practice is all right if no allowance is made in the design of the flanges for the portion of the moment which the web is capable of resisting. He claims that if the rivets do slip a little horizontally, their capacity to resist the vertical shear is not impaired "an iota." The author cannot agree with this statement, for if they

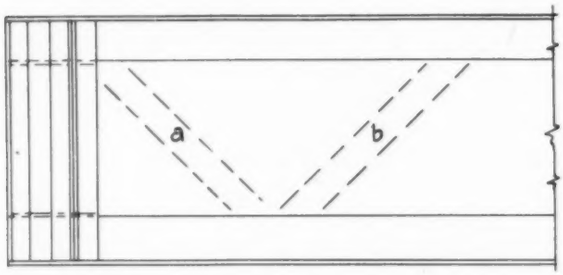


Fig. 11

did slip horizontally they must be resisting a horizontal stress, and if so the resultant of this with the vertical stress must obviously be more than the vertical component alone.

Type *b* for a web splice represents an approximate but safe method. The long plates near the flange angles are figured to resist the bending which the web is capable of resisting, while the middle plates are figured to resist the vertical shear only.

The angles can usually be obtained in longer lengths than the web plate so that the necessity for splicing them or the flange plates does not so often exist. The splice can be effected by putting a short angle over the main angles on either side, and perhaps a short plate on top of the flange plates.

The spacing of the rivets through the flange angles and the web is directly proportional to the depth of the girder and the thickness of the web, and inversely proportional to the shear. The rivets between the flange angles and the flange plates bear

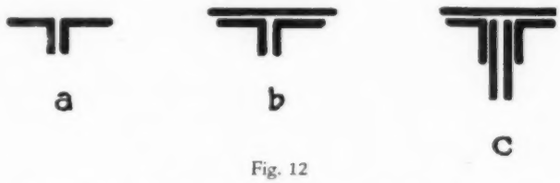


Fig. 12

the same relation to the rivets through the angles and the web that the area of the plates bears to the entire flange area; that is, the smaller the flange plates the fewer the rivets.

The greatest flange area is necessary near the middle of the girder, where the bending is maximum. Therefore the flange plates need not extend the full length of the flanges, but may be cut off at varying distances from the end of the girder. In bridge work it is customary to run one plate the full length of the girder to prevent moisture from entering between the flange angles and the web. In building work this is obviously not necessary.

In Fig. 12 are shown three of the most common types of flanges for building work. These are arranged for light and heavy girders.

The upper flange of a plate girder (unless it is a cantilever) is in compression and has the same tendency to buckle as a column. It is usually possible to so place the plate girder that beams will frame into it at or near its top, thus bracing the top flange. If this cannot be done, the flange should be made as wide as possible, and if this is not sufficient the allowable compression per square inch should be reduced the same as for a column. It is common practice, where the top flange is frequently braced, to allow 16,000# per square inch in the flanges in building work. In bridge work this is not allowed any more than it would be in columns. A formula for the allowable compression in the flanges in plate girders, which would agree in practice with the column formula $16{,}000 - 70l/r$, is $16{,}000 - 200\ l/b$ where *b* is the breadth of the flange. This takes into account that the flange is partially braced by the web and that it is not fully stressed for its whole length, and that the radius of gyration of a section similar to *b*, Fig. 12, is about .25b.

In bridge work when beams frame into the girder some distance below its top, it is common practice to brace the top flange with knee braces setting on top of the top flanges of the beams and extending up against and fastening to the top flange of the girder. This is not usually feasible in building work, as the knee brace might project out into the room and be

in the way. Otherwise it is good design.

The flange angles may be either equal or unequal leg sections. When the unequal leg type is used, it is best to have the long legs horizontal if sufficient room exists in the short leg to get in enough rivets. When the horizontal leg has but one gauge line and the vertical leg has two, it is best not to have more area in the flange plates than in the flange angles; otherwise trouble may be found in getting the rivets through the flange plates. Some specifications require this and provide that the center of gravity of the flange shall not be above the back of the top flange angles. The same care must be taken not to get rivets with too great a grip as is taken in the design of columns. The bottom angles and plates, being in tension, are designed for their net section; that is, with the area of the holes deducted, and it is usually required that the gross area of the top flange shall not be less than the gross area of the bottom flange.

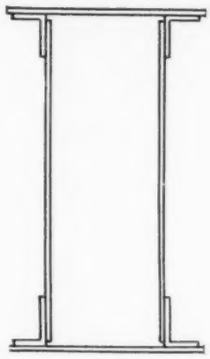


Fig. 13

Fig. 10 shows a plate girder carrying a column and bearing on a column where the webs of the column are parallel to the web of the girder. If the webs of the columns were at right angles to the web of the girder, it would be better to use two girders. Each could be narrow and have its web under a flange of the column. At times it is better to use two girders to avoid the excess depth of a single girder in the building.

No fixed rule can be made for the depth of plate girders in buildings, but in general a depth equal to about 1/10 of the span will work out most satisfactorily. A depth of less than 3 feet is awkward to design, although it can be made down to 2 feet. Special cases require a wide divergence from this rule; in fact, the author has just designed a plate girder for an alteration where the depth was about ½ of the span. This was an extreme condition.

Some engineers, in designing the rivet pitch in the flanges, use the effective depth (that is the depth from center of gravity to center of gravity of flanges), while others use from center to center of rivets. When the plate girder is deep the percentage difference between these two methods is small, but when the girder is shallow it increases and it is best in shallow girders to design both the rivet pitch and the section from the moment of inertia, being careful to deduct for rivet holes in the bottom flange.

A few years ago it was common practice, especially for carrying a wall, to use what was known as a box girder. Such a girder is shown in Fig. 13. It had the advantage of a broad flange, which was good in compression, as was explained in the first article of this series. Care had to be taken, even here, that the plate between the two webs was not too broad for its thickness. Due to the width of flange a wall could readily be built upon it. The chief trouble was that the flange rivets were in single shear, and the designer often forgot to see if it were possible to get in his rivets until the oversight was discovered by the detailer. To avoid this difficulty, it would appear that two girders side by side are much better, and their flanges can be braced together if necessary, so that they will work together to resist buckling.

For very heavy work, more complicated flange sections may be designed. Sometimes they each resemble an I section or a plate and angle column. Another scheme is to use a channel for the flange, with the web flat and the flanges of the top channel turned down. This channel may be replaced by a plate and two angles. These types are especially common in factories to carry a crane girder where lateral stiffness is required to resist the side shock from the moving girder.

The rivets through the intermediate stiffeners need not be very close together. There is no way of figuring this pitch, but 6-inch is frequently used. Some shops prefer to use a pitch such that the rivets will line up with some rivet in the main stiffeners, such as skipping every other one in the intermediate stiffeners.

Column Bases

Column bases are made of either steel or cast iron. For very small struts and columns the bases are made of steel, riveted to the columns. For larger columns the bases are usually separate and made of cast iron. For still larger columns, the bases are made separately and are of cast steel.

In Figs. 14, 15 and 16 are shown the first kind of base. Fig. 14 is for a single-angle strut. A plate is placed under it and the parts are usually held together by a single angle. Another small angle could be placed on the inside of the other leg of the strut. In all cases the bottoms of the struts or columns should be carefully planed to smooth surfaces and care taken that these surfaces be accurately at right angles to the axes of the columns. In Fig. 15 is shown a base for a double-angle strut. Two other small angles could be used to connect the base plate to the strut if desired, these being placed inside the other legs of the angles. Fig. 16 shows a similar base for a small plate and angle column.

In all cases the rivets passing through the base plates should be countersunk on the bottoms. The figure shows these rivets with the conventional sign of a circle with a cross inside, meaning countersunk on the far side. It is usually best to use a ¾-inch plate for the base plate. In Figs. 15 and 14 the connection angles could be ⅜ inch thick, but in Fig. 16 it would be better to make them ½ inch.

When the base extends more than 4 or 5 inches

beyond the edge of the column it is best to make a cast iron base, but some engineers prefer to use a built-up steel base similar to those already described. Fig. 18 shows such a cast iron base, and Fig. 17 a steel base for the same column. If the steel type be used, stiffener angles must be provided on the column. These must contain enough

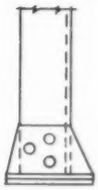


Fig. 14

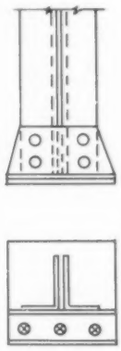


Fig. 15

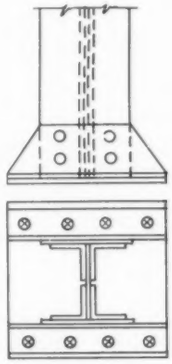


Fig. 16

rivets to develop the portion of the base plate beyond the edge of the column. They must also bear firmly against the base angle and be provided with filler plates between them and the large plate known as the gusset plate. The small angles fastened to the base are simply to stiffen the base plate and prevent it from bending between the gussets. The base plate can be ¾ inch thick, and the base angles ½ inch for the long ones and ⅜ inch for the small ones. The stiffener angles and gussets should be ½ inch thick. The filler plate should be the same thickness as the large base angles.

Sometimes even larger and more elaborate bases than this are made in steel. They are often made long and narrow, making the gussets longer. When the gussets become very large they should have angles riveted on the incline, along their sloping edges, to keep these edges from buckling. The cast iron base shown in Fig. 18 is designed for the same column, and is evidently more simple. The three ribs under the column metal should be made at least as thick as the metal above them. The other ribs should be designed by computing the bending and shear, and designing them the same as a beam for their moment inertia and area in ribs.

It is not advisable to use metal of less than 1 inch nor more than 4 inches. Even 3 inches is as thick as some designers care to go. Where the metal is of varying thickness, cracks are likely to develop in the cooling of the material. Care should be taken in designing to avoid this condition, which is especially likely to occur where the ribs meet each other at the corners of the top plates.

The top plate is usually made a minimum of 1 inch in thickness, with large openings in the middle between the ribs to make it possible for the cores to be removed after the metal has hardened. The top plate should be planed on top to provide an accurate bearing for the column. Care should be taken that this planed surface be exactly level. After the base is made, the four holes in the top should be drilled to allow bolts to pass through, fastening the connection angles on the column firmly to the base. These should be 13/16 inch in diameter for a ¾-inch bolt. They should be drilled, and not cored, to insure accuracy.

The two ribs parallel to the web of the column can usually be made 1 inch unless more material be required for shear or bending. The corner ribs are usually from ¼ inch to ½ inch thicker than the others, as they are longer. In the bottom plate are placed grout holes, usually 2 inches in diameter, to allow the grout to flow freely under the base when it is placed in position. These holes may be cored

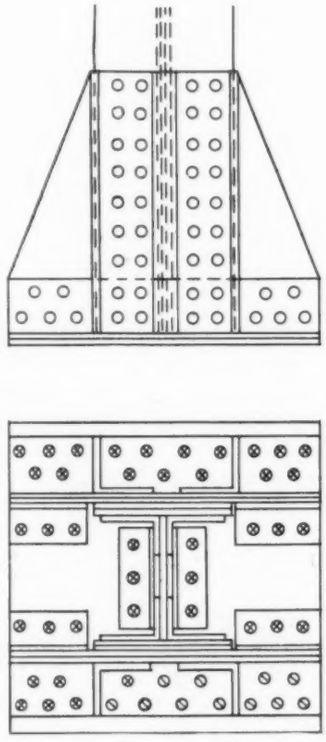
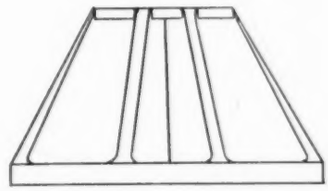


Fig. 17



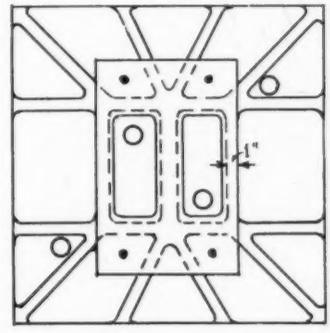


Fig. 18

and they should be so placed that no two will be on the same line parallel to either axis of the base. These should also be placed so as to be as effective as possible in distributing the grout.

When a cast base is placed in position in the building on concrete, it is leveled up by small steel wedges under the edges of the base. Around the top layer of concrete is built a small wooden form and in this the grout in a very fine mixture is poured and allowed to flow under the base until it appears in all of the grout holes and it is certain that the space under the base is entirely filled.

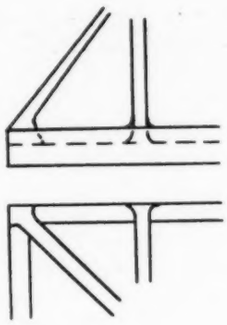


Fig. 19

When the base cools in process of manufacture it sometimes happens that the lower plate warps, forming a curved surface. If this is too marked the base should be rejected. When the ribs meet, or a rib meets the top or bottom plate, there is a slight curve in the material called the fillet. These are usually called for to be ½ inch in radius. They strengthen the base and aid in its manufacture. When the material of the base gets too thick, or is not sufficiently strong to resist local bending between the ribs, a small border may be placed around the outside as shown in Fig. 19. This is usually not over 2 inches in either dimension.

Other styles of cast iron bases are made by various designers, but that shown here is preferred by the author. In one form the top plate is made solid except for the bolt holes, and round holes are provided in the side ribs for extracting the core. In another form the middle ribs form a circle with one across it to carry the web of the column. In such a base the metal of the column does not bear accurately over the ribs below, causing bending in the top plate. It has the advantage of avoiding thick places in the ribs where they meet, as the ribs radiate from the circular rib.

When the column load is large and the metal in the base would be too great to use advantageously in cast iron, it is best to substitute cast steel. This makes a much lighter base, as cast iron in tension is only good for 3,000 # or 3,500 # per square inch while cast steel, like structural steel, is good for 16,000 # per square inch. For buildings not over 11 or 12 stories high, cast iron is usually satisfactory, but for larger buildings cast steel is preferable. When the base rests on grillage beams the bases are considerably smaller than when they rest on concrete, due to the difference in the allowable bearing, and care should be taken, particularly in regard to the shear and direct compression.

In office buildings and similar structures it is not usual to anchor the columns down to the foundations, excepting in buildings where the force of the wind might be an important factor or an uplift be possible, such as at the anchor ends of theater cantilevers. In factories, where the structures would be subjected to shock or vibration, it is common practice to anchor the column bases down to the foundations by means of rods. To make sure that these rods are accurately placed to fit the structural material above, a thin plate is used on top of the concrete in placing the rods in the green concrete to act as templates. These are known as sole plates.

These anchor rods extend down into the concrete to obtain an anchorage sufficient to develop the stress to which they may be subjected. When the concrete footing is sufficiently deep this may be effected simply by the bond of the concrete to the rod. When this depth is not great enough it is necessary to anchor them in some way. A simple right-angle bend has no value as an anchor. It simply adds to the length of the rod to resist slipping by bond resistance. All recognized authorities are agreed on this subject although some contractors argue otherwise.

The full strength of the rod may be developed however by a hook formed by bending the rod around another rod until it is bent around double or an angle of 180°. Some contractors will object to doing this, saying that they have no means of doing it. It is usually an excuse to avoid the discovery of defective material. Rods are often made of an inferior grade of material such as wrought iron or soft steel and if they were bent around double they might fracture. One of the tests required in good specifications for structural steel is that it should be possible to bend a rod double without sign of fracture. When these hooks are made, sufficient concrete should cover them to prevent their straightening out. Another way of develop-

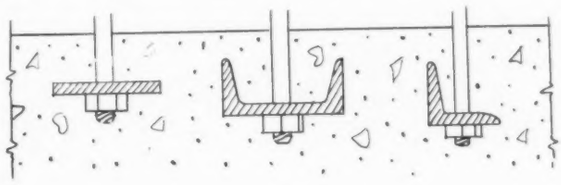


Fig. 20

ing the rods, is to place plates on the bottom of the rods with nuts under them. The concrete footing might be of such shape that even with such anchorage a piece of the footing could be lifted out by shearing the concrete or the bearing of the plate against the concrete might not be sufficient. This bearing is limited sometimes by the possible thickness of the plate due to its strength in bending. To overcome this the p'ates might be replaced by channels placed with the webs flat to provide surface for bearing while the upturned flanges resist bending. Angles could be used and a similar endless number of designs as the case might require, as in Fig. 20.

A New Brick Wall

THE Common Brick Manufacturers' Association has developed a new type of brick wall which it is expected will greatly affect residence construction in America, because the use of this wall, it is claimed, will bring masonry construction down to the level, in cost, of frame construction. The principle of its construction consists of laying all or part of the bricks on their edges instead of flat, and leaving a hollow space between which is bridged at intervals, depending upon the weight on the wall, by headers that bond the two portions of the wall together.

During the recent national conference of the Building Officials of the United States, held at Cleveland, a practical test of the new "Ideal" wall was made. Building commissioners representing cities all the way from Boston to Portland, Ore. witnessed this test and the Ideal wall was the subject of active discussion during the conference.

The accompanying illustration shows how this new method of laying brick was tested, both as to its compression strength and its lateral strength. Two parallel 8-inch walls were erected, 12 feet apart. Each wall was 9 feet high by 12 feet long, with a short perpendicular wall at each end. On top of the walls was placed a floor, and about this was built a wall 4 feet high of the 12-inch Ideal type. The enclosure was then loaded with sand to overflowing. The age of the wall, at the time of loading, was nine days.



Structural Test, Showing Variety of Bonds

In the supporting walls there were four types of Ideal construction. One-half of one wall was 8-inch all-rowlock, with alternate headers and stretchers. The other half of the same wall omitted 50 per cent of the through headers, using bats to replace them. The other wall was one-half rowlock backing, headers every third course and the other half rowlock backing, headers every sixth course. The mortar was 1:1:6, and ordinary run of kiln common brick were used.

The weight of the load upon the base of the wall was 82 tons, which the engineers estimated to demonstrate a factor of safety of 3 over a normal residence load. The walls showed not the slightest indication of stress, and according to V. D. Allen, former Building Commissioner of Cleveland, who planned the test, they could have carried four or five times this load with safety.

The parapet wall upon the top was made 12-inch all-rowlock, which is recommended for foundation construction, and this was subjected to a severe test by the pressure of the tons of sand on the inside of the wall. There were no bracing or supporting rods of any kind, the wall itself bearing the load without defect. The test was conducted by the Common Brick Manufacturers' Association of America.

A number of cities have already accepted this type of wall in their codes for residence construction, and following the engineering tests and fire tests of the wall now being made by the United States Bureau of Standards at both the Washington and Pittsburgh laboratories, more cities are expected to approve it.

In comparison with the solid brick wall, it saves one-third the brick, one-half the mortar, one-fourth the labor, and removes the necessity for furring and lathing, since it is claimed that the wall is absolutely dry when plastered directly on the brick. The lack of necessity for furring is explained by the fact that moisture can be conducted through a brick wall by one route only,—through the mortar joint. There is no danger, even in districts with a heavy rainfall, in moisture being conducted the full length of a header by capillary attraction. The Ideal wall provides a positive break in the mortar joint and eliminates the penetration of moisture from this cause. The 8-inch wall of this type has one such break and the 12-inch wall has two breaks in the mortar joint. In the 12-inch wall there is no material in continuous contact from front to back of the wall. The cavity also aids in keeping the wall dry, by the slight but continuous flow of air within it.

MINOR ARCHITECTURE
EXEMPLIFIED IN MODERATE COST BUILDINGS

Some Post-War Housing Developments in New England

THE HOUSING COMPANY, ARCHITECTS
By TYLER STEWART ROGERS

INDUSTRIAL housing and the housing shortage are inseparably linked together in the economic problems of the day. The housing shortage is due to well defined but not easily remedied causes. It is increasing in importance daily, with little activity yet showing above the horizon to alleviate the relatively acute conditions. Many methods for attacking the problem have been suggested, ranging from tax-exemption schemes to a direct copy of the fatal British government subsidy plan. But after all, though it may seem trite to say so, the only real solution to the problem is the actual construction of houses, and he who builds even one home has accomplished more of real value than the hundreds who talk, criticise and argue over the situation.

The individual family is not yet in dire need, speaking broadly, for no place is yet so congested that people must be housed in tents or other temporary shelters. By the process of readjustment and the use of smaller quarters for each family, we have been able, like sitting on the lid of a full vacation trunk, to get everyone in somehow. How long this packing and rearrangement can go on is hard to determine, but there is a limit to everything.

Many manufacturers have a graver problem on their hands than has the individual, for their interests cannot stop with finding homes for themselves; they must find homes for many of their workers, or else do without their services. The situation has recently changed from the earlier condition, where good workmen's homes were considered a sound investment because they attracted more contented and efficient employes (*i.e.*, a matter of plant efficiency), to the present condition where homes are often essential in order to have employes to operate the plants; in other words, it has become a matter of plant equipment.

This condition varies widely in different centers and in different parts of the country. In the South it has always been a matter of plant equipment, and the only question was how good shall (or must) the houses be to obtain the proper class of employes. This is due to the fact that most Southern manufacturing plants are located in unsettled districts, and from the start have been forced to build industrial villages near the sites of the factories.

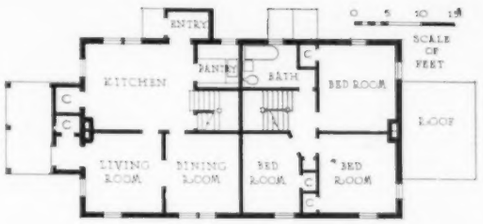
In the North the conditions vary, from a reasonable supply of labor, when the industry is located near large labor centers, to a situation similar to that of the Southern mills when the industry is



View from the North. Housing Development at Newmarket, N. H.



First and Second Floor Plans of Four-Family House

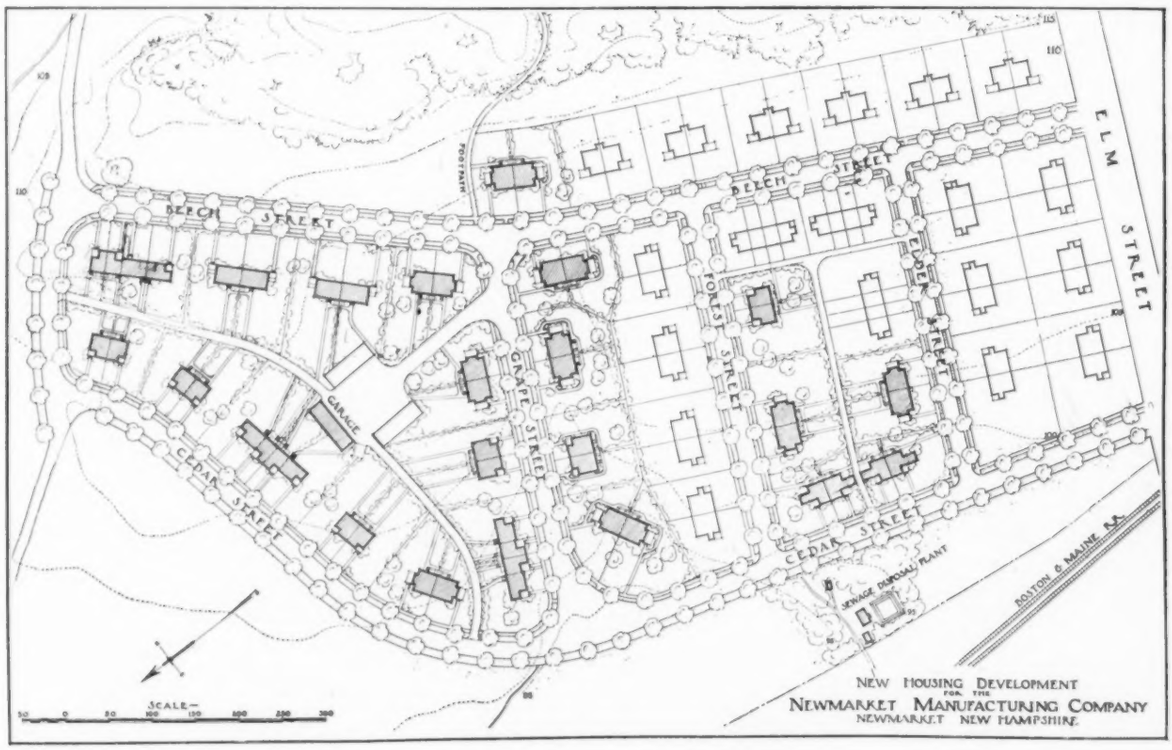


First and Second Floor Plans
Two-Family House, Newmarket, N. H.

located in a small village some distance from the major labor sources. Many New England mills have reached the point where their continued growth is limited absolutely by the housing accommodations of their communities. With little hope of speculative building or the erection of homes by the workers to increase the capacity of their labor centers, these mills have come to the point where plant expansion involves the construction of homes, either directly as a part of the plant equipment, or indirectly by subsidizing other agencies.

This situation, though apparently favoring the city manufacturer, has certain compensations for the village plant. They are the oft-quoted arguments in favor of decentralization, backed up by the favorable experiences of thousands of industries which have moved out into "satellite" communities. There is the increased stability of labor, reducing the waste of excessive turnover; there is the possibility of selecting better types of workers, due to the natural action of the more intelligent people in leaving city congestion for the more healthful suburban locations, and there is plant loyalty, fostered in many places by some form of industrial democracy or shop representation. Then there are such factors as lower land values, resulting in lower overhead, lower living costs resulting in lower wages (without financial detriment to the workers), the possibility of unlimited expansion and the like, all favoring the out of town industry.

The forces which brought about present conditions were observable even before the war, as may be shown by numerous discussions of the subject in architectural and other journals prior to 1917 by housing and town planning experts. The situation was brought to a head during and after the war, so that well informed persons could foresee approximately the results we are now experiencing. Perhaps not many of them expected the extreme delay in reviving the construction industry which has



Plot Plan of Project, Showing Completed Houses



Six Houses of Varying Plans for Skilled Mechanics at Nashua, N. H.

actually occurred, for we were too optimistic to anticipate the present depression.

Nevertheless, the observant ones were relatively few, and those who profited by their observations to take foresighted action were rare. Scattered here and there over the country are housing developments built by industries since the close of the war which attest the progressiveness and forcefulness of the few who saw and acted. These industries anticipated the coming crisis, and solved the problem in the only logical way—by actually building homes. Others, procrastinating, are today where they were three years ago. Though some may say that those who built during the last few years did so at peak costs, the answer is easily found. It must be assumed that housing was needed for the industries to such an extent that even a loss in capital from a real estate point of view would be offset by gains to the industries in other ways. Granted that, then these plants have gained what they sought and have enjoyed its advantages, while their competitors have remained with the same problems, multiplied daily, on their hands. The present depression may give the tardy ones a little respite, but when activity commences the superior position of the plants with adequate housing facilities will testify to the correctness of their judgment.

Such was the position of the majority of the clients whom the Housing Company has served since 1919. The accompanying illustrations and descriptive matter show clearly the manner and character of industrial housing carried out by this firm for New England industries since the close of the war. In discussing the particular projects selected it is not the intention to convey an impression that they are the major developments in New England during this period, or even that they are



Plans of House at Right

representative of the most common type of workers' homes. Rather, on the contrary, these projects were selected on account of some distinction in the character of the houses, or by reason of the nature of the problem facing the architects.

There is one characteristic common to all of the developments illustrated, in fact common to all of the work so far done by this firm in New England, and that is the recognition of native architectural precedents. The truly indigenous architecture of this section reflects the puritanical spirit of its settlers, showing, except in the more polished and graceful works of Georgian character, a simplicity, restraint, and even a certain severity of feeling which distinguishes it from the colonial architecture of the Middle and Southern sections. Some people speak of this style as the New England farmhouse type to distinguish it from the more popular style of the larger town houses. Perhaps it would be better to call it the New England small house or cottage type.

Native architecture naturally reflects the climatic character of a region. New England builders have for generations fortified their dwellings against cold, snowy winters and damp, easterly winds by small windows, vestibuled entrances, enclosed cornices and the like. This sort of adaptation to environment is another quality inherent in the work of the Housing Company. Their clients were also influenced in favor of this style of treatment because its characteristics spell economy, and economy was of prime importance in every case, in order to offset inflated building costs.

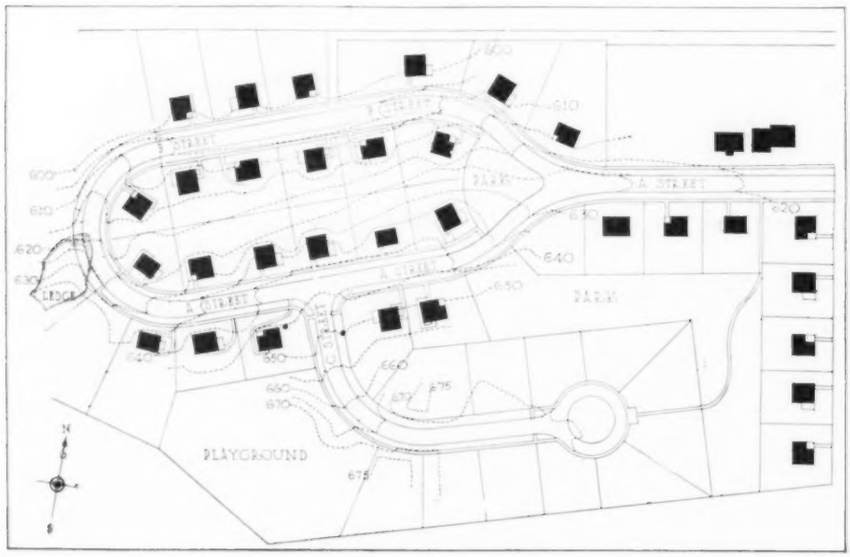
Taking them in the order of their sizes, the largest of the projects illustrated is that for the Newmarket Manufacturing Company at Newmarket, N. H. Twenty-two double or group houses for 50 families were constructed to provide dwellings for opera-



View of Development at West Fitchburg, with Floor Plans of House in Foreground

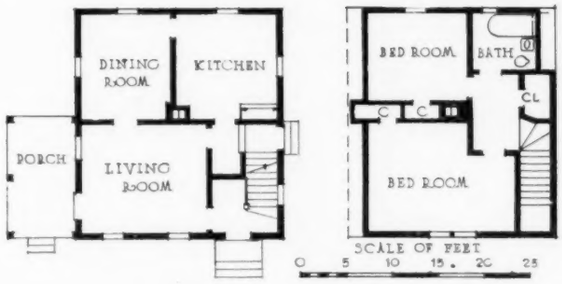
tives, as well as for overseers and foremen. Grouping the families together was done partly for economy in land and construction cost, partly for the reduction in costs of essential utilities, such as roads, water supply, and sewerage systems, and partly because the houses were to be rented instead of sold to the operatives. Opportunity was thus created for the use of structural units of fairly large sizes, which has resulted in a project distinctive for the solidity and dignity of its buildings and for the impressiveness of the ensemble.

The various types of buildings are built up from relatively few similar units of one and a half and two stories in height. The use of two different story heights has made possible a variation in roof lines, and a diversity of appearance that would not have been possible otherwise. For the most part the buildings are symmetrical in external appearance but occasionally two or more unsymmetrical units have been placed together to build up a street group of good proportions. In general appearance the buildings are characterized by small, well placed windows, adequate and appropriate dormers, and glass enclosed porches. The construction is of brick with asphalt shingle roofs, concrete foundations and lintels, and wood trim painted white. The floors are of rift yellow pine, the inside walls and ceilings of plaster on wood lath, and the interior finish is of N. C. pine. In equipment, all of the tenements are complete in every respect. The kitchens contain ample food cabinets, wash trays, sinks and hot water boilers. The bathrooms have the usual fittings. Hot air one-pipe furnaces and electric lights are provided for throughout.

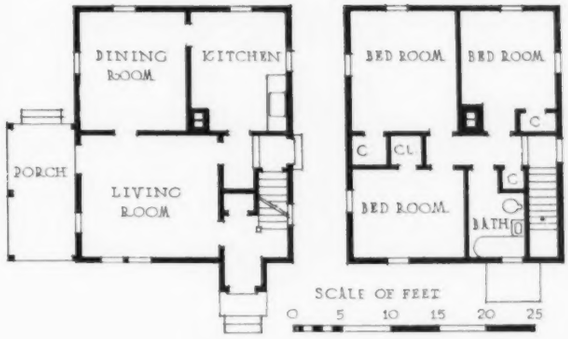


Plot Plan of Housing Development at West Fitchburg, Mass.

The project involved the layout of the tract of land, the development of new streets and the provision of a complete sewerage system with a disposal plant. A community garage, one of three planned for, was built in the center of a large block. Although



Example of Five-Room House Plan



Floor Plans of House Below at Left

no planting was done when the photographs were made, and the houses and streets look rather bare and unadorned, it is easy to visualize the stately character of the tract which will obtain a generation hence with the fine houses covered with vines and shaded by elms and maples. Newmarket bids fair to take an important place in the history of private industrial housing developments, for few projects have been built with such regard for permanence, quality and character.

At West Fitchburg, Mass., is another relatively large housing project of quite a different type. It was designed and built for the Homestead Association, Inc., a subsidiary of the American Woolen Company, to house employes of the Beoli Mills in that town. The two outstanding features of this community, which comprises some 30 houses, are the consistent use of single dwellings of wooden construction, and the topography of the site.

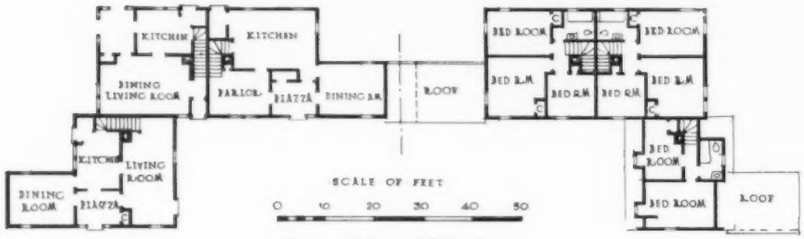
The houses, though of similar character, are of five different types and contain four, five or six rooms each. Both one and one-half and two-story arrangements are used. Outside open porches or open corner porches give wide outlooks from the hill on which the dwellings are built. Rear yards



Houses at Foot of A Street. Development at West Fitchburg, Mass.



Model of Six-Family Group House at Crompton, R. I.



First and Second Floor Plans

are screened off by means of lattice fences which also function to tie the houses one to another, and to lend a continuity of feeling to the development which might otherwise be jeopardized or destroyed by the nature of the site. Each house has complete bathroom and kitchen equipment, a one-pipe heater, and each is wired for electricity. Gas is supplied for cooking. The buildings are of frame with clapboard siding, asphalt shingle roofs, interior walls and ceilings of plaster board, floors of fir, yellow pine or maple, and finish of yellow pine.

The site presented unusual difficulties owing to its position on the north side of a hill, having an average slope of 20 per cent. The houses are arranged around a loop which is elongated to parallel the contours as much as possible. The loop is joined to a main road which leads directly up the hill by a single road which forms the stem to the loop, making a "tennis racquet" on the plan. The maximum difference in elevation across the improved area is 78 feet, with an average difference from the upper row of house lots to the lower row (there are four rows in all) of 60 feet.

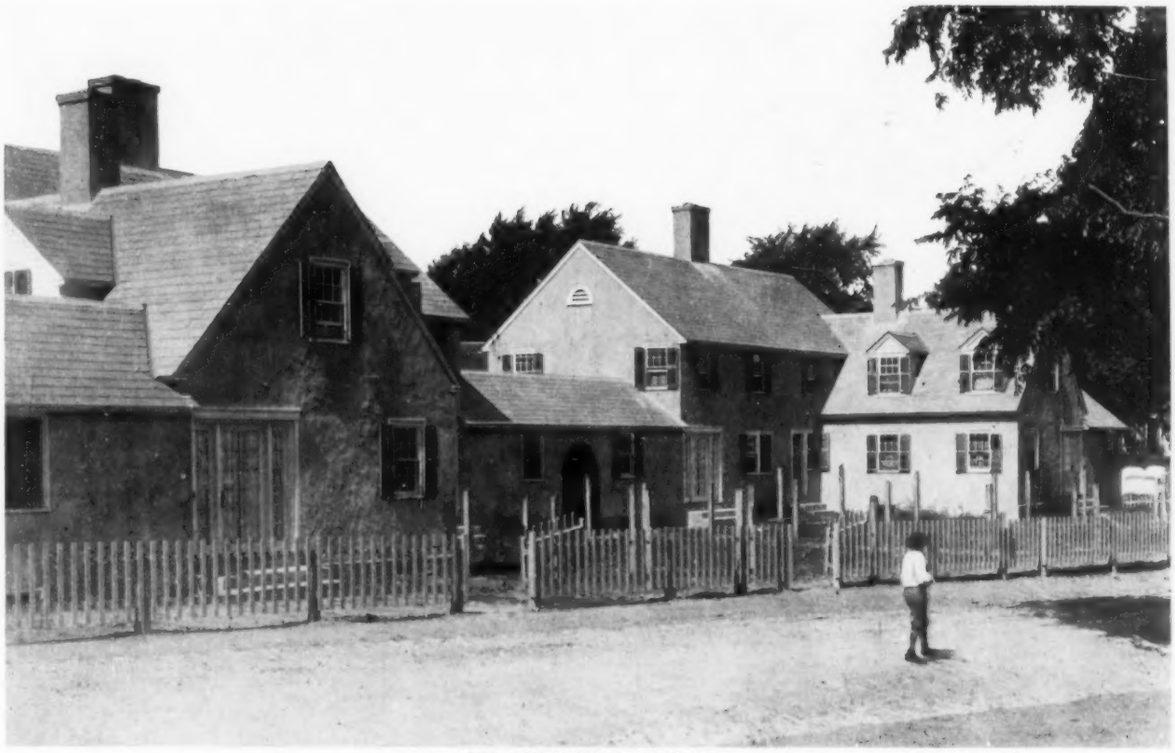
The Crompton Company at Crompton, R. I., built two double houses and a six-family group dwelling for some of its employes. These buildings were built of frame with stucco on wire lath walls, and slate roofs. They possess unusually good character, due to their simplicity and excellent proportions, the interesting relations and balance of masses in the group dwelling, and the texture of the expansive plaster walls.

The double houses depart somewhat from the New England type already referred to, and suggest contemporary English influence. The group house, however, hints strongly of our native rambling farmhouses, which have several units of diminishing sizes appended to the main houses in the form of "wings" or "ells." The group house is really a pair of three-family dwellings joined together by an arched opening spanning a service alley. It is interesting to note the similarity between a model made of the group before its construction and the actual building itself, and the faithfulness with which the model conveys a true impression of the finished product. The actual building loses some of its charm because of the badly placed fence posts and the lack of planting in the front yards.

At Nashua, N. H., is another small group of new homes erected to house the overseers and better class operatives of an industry. The Nashua Gummed and Coated Paper Company built six single brick cottages, all of different plan, but all having common characteristics which tie the group together harmoniously. These buildings were very thoroughly constructed, having brick walls, asphalt shingled roofs, plaster walls and ceilings, fir floors and N. C. pine finish, copper screens and complete equipment in the bathrooms and kitchens. Both electricity and gas are available. Hot air furnaces are used in all the houses.

The manufacturers who have thus checkmated the housing shortage by vigorous, constructive action have added to their business many assets that do not show directly on their books, for they have invariably built well and have provided, in spite of high costs, homes that raise the standard of living for their workmen to a plane commensurate with the present-day realization of labor's vital part in the world's work. Thus these manufacturers are winning the good will of labor, they are serving the interests of their communities and the country at large, and they have set an example of constructive optimism which cannot fail to help capital out of its present depression.

It is a particularly notable fact that every project which the Housing Company has undertaken, whether in the South or the North, has included modern bathroom and kitchen equipment and sewer connections.



SIX-FAMILY HOUSE GROUP



TWO-FAMILY HOUSE

HOUSING DEVELOPMENT AT CROMPTON, R. I.

THE HOUSING COMPANY, ARCHITECTS





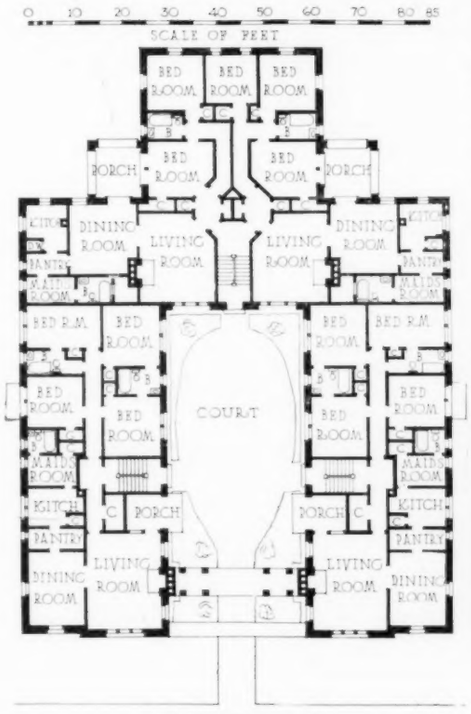
TWO VIEWS OF GROUP HOUSES

HOUSING DEVELOPMENT AT NEWMARKET, N. H.

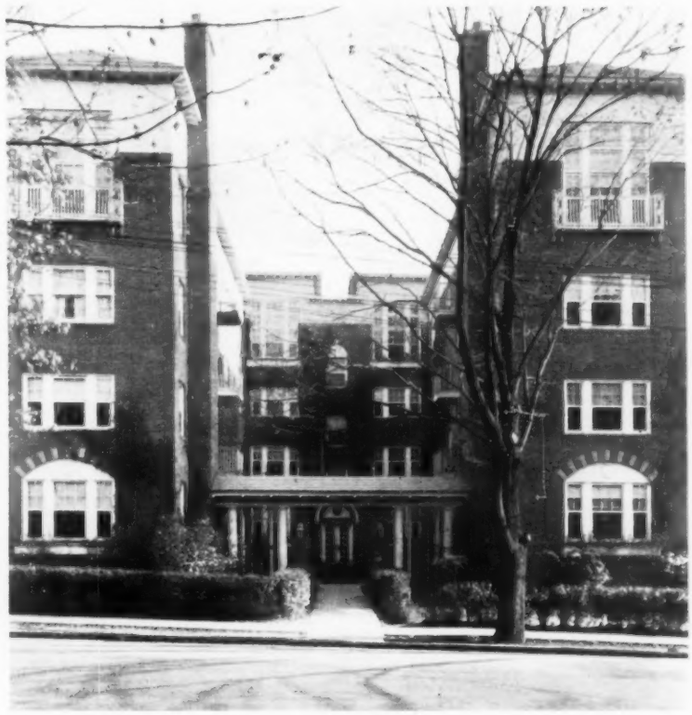
THE HOUSING COMPANY, ARCHITECTS



GENERAL VIEW



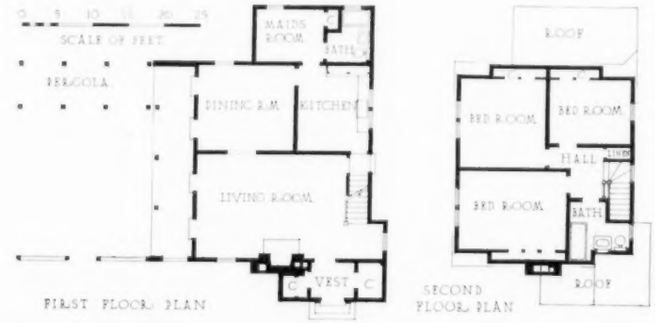
TYPICAL FLOOR PLAN



COURT VIEW

PONDFIELD COURT APARTMENTS, BRONXVILLE, N. Y

HARRY LESLIE WALKER, ARCHITECT



GENERAL VIEW

HOUSE AT NEW ROCHELLE, N. Y.

C. A. PATTERSON, ARCHITECT

DECORATION & FURNITURE

Jeanne Taylor, *Associate Editors*, Leland W. Lyon, R.A.

Authentic Precedent in Colonial Interiors

IN the architectural development in moderate cost dwelling designs throughout the country there is noted a decidedly quickening interest in the early American colonial types. The result is that many of the new houses throughout the West, and as far South as Texas, are modeled upon the early houses of the English or Dutch colonists.

Architects show a steadily increasing interest in developing their work to include advice as to the furniture and decorations to be used. It is but natural, therefore, that the growing influence of the colonial types of furnishing should interest the architect, since they apply to the problems of interior decoration as well as to those of domestic architecture.

We have been fortunate in obtaining some excellent photographs of authentic English colonial furniture of an early American period. Some years ago an enthusiastic collector of colonial furniture, George T. Ives, of Danbury, Conn., removed from the Old Post Road at Brookfield, Conn., to another point on the same road in Danbury, an old building constructed in the seventeenth century as a tavern to serve the stage coach route which was operated on the Old Post Road between New York and Hartford, via Litchfield and Farmington. This building was carefully taken down and rebuilt in its new location. It has since been used by Mr. Ives as a home, and it provides a logical setting for an unusually interesting collection of colonial furniture; in fact the interiors of the old tavern are practically unchanged. Naturally, this collection of furniture and decorations, representing the result of a lifetime of interest and effort on the part of an enthusiastic collector, offers many instructive suggestions and serves almost as a textbook illustrating authentic types of early American furniture.

The active interest in colonial furniture, which for many years has been in evidence in the Eastern section of this country, has naturally led to the adaptation of various types for commercial reproduction. It is found, however, that in many instances the real colonial precedent has been almost lost sight of, and that in the course of such commercial production graceful lines and contours have often been much changed to meet the demands of the processes of manufacture or to cater to the supposed taste of purchasers. Among architects the interest in colonial furniture is general, but opportunities for examining authentic pieces are comparatively



Entrance Hall Looking into Tap Room (Fig. 1)



A Corner of the Dining Room (Fig. 5)

few, particularly in the West and South. It may be helpful, therefore,to illustrate a number of types of such furniture and decorations, and to give brief descriptions of the rooms with a classification of their furniture, since in this way a document of definite reference value may be added to the architect's collection of data on furniture and decoration.

Fig. 1 is a view of the main entrance to the tavern, looking into the tap room. Of particular interest is the iron hardware on the large entrance door, and the door itself, with its panels flush with the rails and stiles. Turning into the tap room, Fig. 2 (illustrated in the following plates) shows the interesting furnishing and equipment of the bar room of early American days. Studying the illustration from left to right several pieces of particular interest include a large wing rocker which, it may be noted, belonged to General Putnam. The settle is of paneled pine, aged to a soft brown. The mantel and the door at the left of the illustration are, of course, of a later date, though it may be noted that the simple, graceful paneling of the door is of particular interest as a study in proportion. The walls and ceiling of this room are painted a soft old rose color. Woodwork is of white pine throughout, and the floors are of natural gray oak.



Dining Room Looking toward Bedroom (Fig. 4)

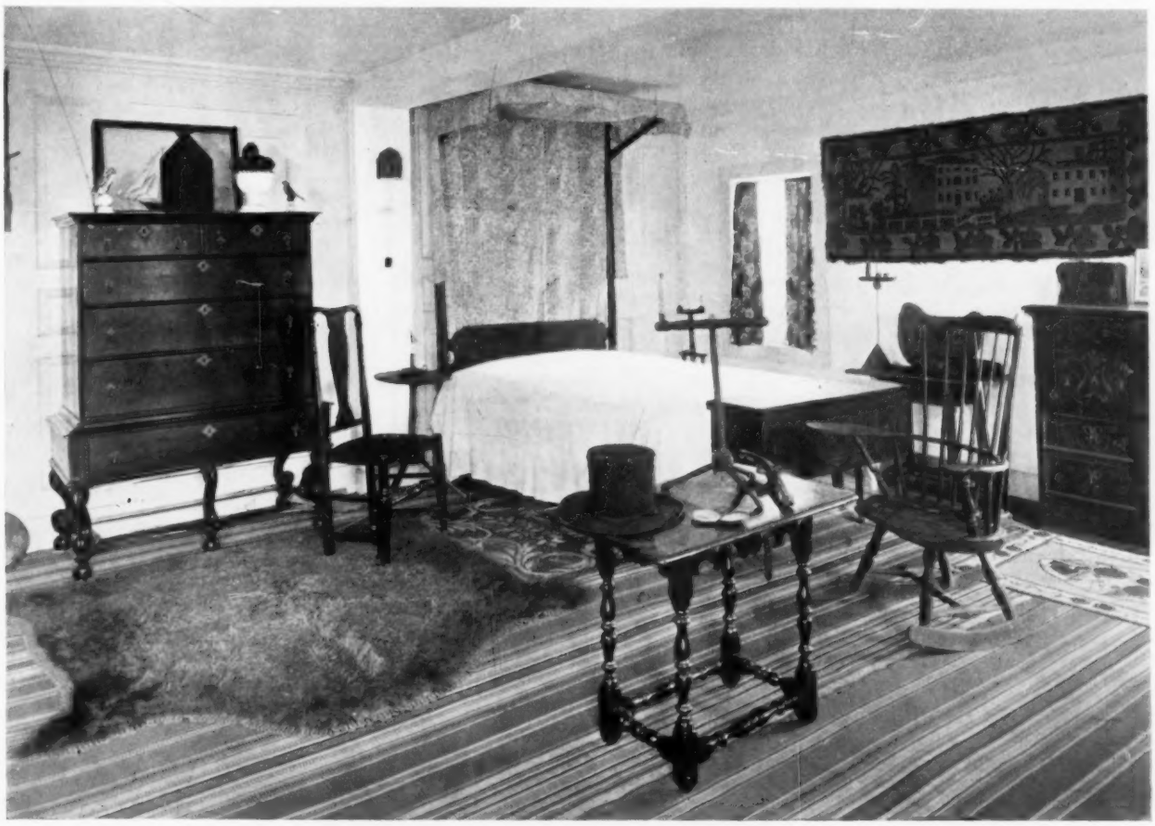
The rugs used in this room are of the braided rag and hooked types. It is interesting to note the complete bar equipment of the old days, as shown in the cupboards to the right of the fireplace. Numerous graceful fixtures for candle lights are to be noticed.

Another view of this same room, Fig. 3, (on a following plate) shows a "Carver" chair, an "Elder Brewster" chair, a butterfly table, and a comb-back Windsor chair with a writing-arm. The tall clock is an excellent piece of cabinet work, executed with the simple lines of the period and it brings out the full-grain effects of curly maple. Throughout these interiors the painted window shades may be noted, each carrying an outdoor scene, accentuated as the daylight passes through the shade.



Parlor with Entrance Doorway (Fig. 6)

Figs. 4 and 5 show different views of the dining room. This room has the same gray oak floor with accentuated grain, due to the wearing process of years of cleaning. The walls are of white pine paneling, and here they are painted a pumpkin yellow, with simple white curtains at the windows. To the left of Fig. 4 will be noted a curly maple spread-leg table. Next to this is a pine cellarette, while in the corner is to be noted a gate-leg table especially designed to fit in a corner. The large



Room Known as Ladies' Parlor (Fig. 7)

table is also of the gate-leg type, and the chairs are comb-back Windsors. The sideboard is of particular interest. It is built of pine, showing the natural grain and having a small amount of painted ornamentation. The lines of this sideboard are particularly graceful, suggesting a later English period.

Other illustrations, Figs. 6 and 7, are views of the ladies' parlor. It will be noted that this parlor has a private front entrance. In Fig. 6 there is shown an unusually fine example of a fireside chair. It will be seen that the wings of this chair are of carved curly maple, a very unusual and attractive feature. The clock shown in this illustration is known as a grandmother's clock. Usually we hear of the grandfather's clock, but the grandmother's clock is of a smaller type and not quite as imposing as the usual grandfather's clock. The chest of drawers is of pine wood, with scalloped base and attractive fittings. In the other view of this room, Fig. 7, there will be noted a chest of drawers resting on legs and stretchers and known as a high boy. The type of bed shown is known as a "slaw bed." This is probably the forerunner of the ubiquitous door bed, as it is designed to fold up, and the canopy curtain is pulled out to conceal it. These beds were often used in the old taverns, and were held in reserve for unexpected or extra guests. At the foot of the bed will be noted a chest which was used for the storage of blankets. Here again the writing-arm, comb-back Windsor chair with back braces is in evidence, this example being of the rocker type. On the wall will be noted an unusually fine old hooked rug. The chest of drawers is of decorated pine. Here the floors are completely covered with carpet, and the hangings are of flowered fabric in subdued colors.

A glimpse into the old ballroom, Fig. 8, shows extreme simplicity of furnishing. In the corner may be noted a pile of hand painted bandboxes, much used in this period, and in attractive, brilliant colors. Here again, the painted window shades are in evidence. Over the pine settle hangs the old tavern sign, showing the coat of arms of Connecticut. The arm chair in the background is one originally made for George Washington. Next to this is an interesting Windsor settle with fingered arms. To the right of the settle may be noted a banister-back arm chair, and in the right foreground of the picture is a small settle of the type known in the colonies as a "wagon seat."

Illustrations such as these are useful in showing the kinds of furnishings which are appropriate for use in an interior of the early English colonial type. Many of the pieces of furniture, and some of the accessories, may be had in excellent reproductions, and rugs of both the braided and hooked varieties are now being made again and may be had in any desired colors and of almost any size. Many architects have found that clients are readily interested in acquiring suitable furnishings, and that with even a few suggestions pointing out the desirability of furnishing with consistency, an interest has been awakened which often leads to surprising results.



The Old Ballroom (Fig. 8)

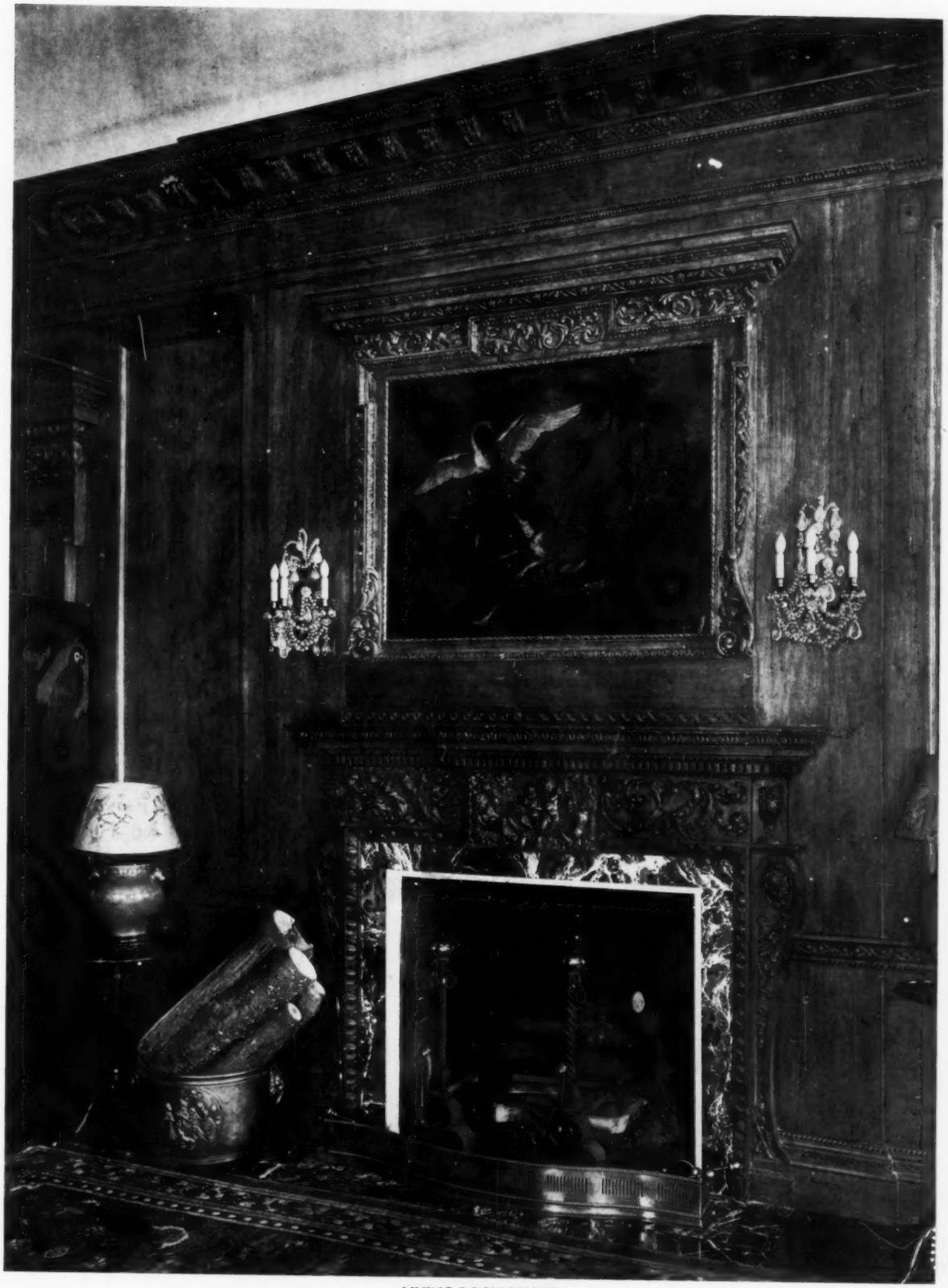




TWO VIEWS OF TAP ROOM (FIGS. 2 AND 3)

RESTORATION OF OLD TAVERN AT DANBURY, CONN.

SHOWING FURNITURE COLLECTION OF GEORGE T. IVES, ESQ.



LIVING ROOM MANTEL

HOUSE OF JAMES A. BURDEN, ESQ., SYOSSET, L. I., N. Y.

DELANO & ALDRICH, ARCHITECTS

BUSINESS & FINANCE

C. Stanley Taylor, *Associate Editor*

Developing the Constructive Force of the Architectural Profession

OUT of all the editorial comment which has been made on the subject of advertising by architects, and publicity which would tend to place the profession more favorably before the public, there apparently have been no practical suggestions acceptable generally to architects. It may be well at this point, therefore, to restate certain facts and conditions which on several occasions have been brought before the profession, regarding the changing conditions under which the architect is operating today.

It is now evident to all within the profession that architecture must receive serious consideration as a business, as well as a profession. The need for a broader public understanding of the responsibilities and activities of the architect is evident. To those who understand the diversified character of the architect's work, and of the demands which are made upon him, there is no need of justifying his logical position in the economic structure. Unfortunately, however, here is but one phase of the activity of an architect's office which ever comes to the attention of the public—the artistic phase, as evidenced in the design of buildings of every type, which may compel attention because of their interesting character. The work of the architect in connection with the development of a building project passes without recognition. The detailed efforts of preparing working drawings and specifications, which make possible the construction of a building according to the demands of economy and practical utility, pass for very little from the public viewpoint. As the building is being erected it is the building contrac or who receives publicity.

One reason for the existence of this condition (with due regard to such associated effort as may have been made in the past by architectural organizations), is that there has been little constructive effort made locally by architects, individually or in groups. As a body in each community, architects have not functioned conspicuously on local problems, except in a few striking instances. Recently the writer had the opportunity of observing rather closely some of the work which had been done in Chicago by the Illinois Chapter of the American Institute of Architects and by the Illinois Society of Architects. This has been particularly in reference to suggested changes in the building code of Chicago. The actual details of such activity and the results which may be forthcoming are not of particular importance to this discussion. *A distinct impression left by our observation, however, has been that possibly through such constructive effort there at last opens up a channel through which the architectural profession may come definitely before the public in matters of public service.*

If we may digress for a moment, it is advisable to again point out the fact that the architect is constantly thinking and working in terms of one of the most important economic elements affecting the daily life of every person. This is the element of *shelter* as represented by buildings of every nature. Homes constitute the most important single factor in social life and intercourse. Today the housing problem is so acute that the attention of everyone is directed to this question, and the daily press, as never before, gives consideration to home building because it is actively in the public interest. Buildings are the most important tools of industry, for without them we should have no production and no commerce.

Digressing still further, we may now call attention to the lack of uniformity in building codes in various cities and towns throughout this country, and to the fact that the average code contains restrictions as to types of building materials and limitations as to construction practice which have a directly detrimental effect on the cost of building construction. This is because in many instances such codes entail the use of unnecessary quantities of material and an over-demand of structural precautions, and also because through the barring out of materials which have been developed to a point of sound utility, competition is decreased.

Having in mind the facts already outlined, it has occurred to us that here may be an opportunity for bringing the architectural profession, in local units, before the public in no uncertain way, gaining thereby favorable and proper publicity for the profession as well as a wider recognition by other business interests which contribute to the industrial, commercial and civic development of every locality. The fact that architects can get together and wield direct influence toward the correction of unfavorable local building conditions and restrictions has already been shown in several instances, but the need for leadership in this activity is evident. We believe, therefore, that now is the time for architects, either through already organized bodies or through the formation of local organizat ons, to take their proper position in relation to public activities of various forms, and in actual leadership toward the correction of unfavorable conditions, opinions, laws and codes.

Practical Results Under Fixed-Fee Building Contracts

IN another article in this Department we have outlined the complete service rendered by one architectural organization. Naturally, there are but few organizations which are equipped to carry out complete building projects in this manner, but, as we have suggested in various articles in past issues of THE ARCHITECTURAL FORUM, a somewhat similar service may be developed by architects through co-operation with practical builders under the fixed-fee type of building contract.

As a result of the discussion on the subject of the cost-plus-fixed-fee contract, we have received from architects a number of letters covering various points involved in this relationship. One question, almost invariably asked, relates to the actual advantages to be gained by letting out a building project under this type of contract. While we have discussed the theoretical advantages before, we have found it interesting to investigate the actual experiences of several large firms of building contractors who work exclusively under this form of contractual relationship.

In discussing this matter with contractors who work on the fixed-fee contract basis, we have found no apparent attempt to bring in an element of "coloration" to support the cause of this type of contract. Naturally such firms are interested in working on this basis, but where they are properly organized to render service it is evident that a service which brings them closely in touch with the interests of architect and owner will have good results if the builder knows his business.

While discussing this subject we have been impressed primarily with the importance of selecting a builder on a competitive basis. At first thought it would seem that competitive bids could not be taken under the cost-plus-fixed-fee type of contract, but it was suggested by the builders themselves that competitive bids might be taken, if due attention were paid to these several points:

1. The business standing and experience of the contractor.
2. The amount of fee required as payment for carrying out the work.
3. Willingness of the contractor to include a penalty clause, which would reduce his fee in case of excess cost.
4. Amount of bonus on saving over estimated cost.
5. The estimated cost of the work, and methods by which this cost is determined.

While it is true that the contractor is assured of at least a portion of his fee, there is no reason to believe that a contractor who is carrying on his business in a sound manner would be so blind to his own interest as to become careless or inattentive to costs. Certainly if the contractor has carried out work to the satisfaction of other architects and owners on this basis, it is not likely that his work will be any less satisfactory in the future than in the past. It was found that the close co-ordination of the architect's and contractor's forces in designing, listing, purchasing, shipping and building was of direct value to the owner in saving duplication of effort. This type of contract works most favorably when the contract is awarded before working drawings and specifications are complete. This makes it possible to bring in the contractor and to allow him ample time to deal with sub-contractors.

In examining the results of the operation of the fixed-fee contract on two buildings—one large and one small—now under way, we have found that the spirit of the work is excellent. The owner, architect and contractor meet once or twice a week to discuss the progress of the operation and any required changes. The contractor, being assured of the work and not hurried by the necessity of meeting competitive bids for the general contract, is able to work directly with the architect and to incorporate in the requirements of plans and specifications any such changes as might be made desirable by market conditions. More time is given, in this manner, for sub-contractors to familiarize themselves with the requirements of the work, and a large part of the necessary material and equipment has been purchased while the plans were still under way. The architect, owner and contractor all work in direct co-operation to get the best possible figures on materials and sub-contracts. This involves good bargaining and good judgment, with full consideration of the owner's interests, which might not be possible under a lump-sum contract method.

Many types of building projects involve numerous changes after the contract has been let. Such changes are usually represented by "extras" under the lump-sum contract, but with the fixed-fee method it is possible to incorporate changes, sometimes at no cost to the owner, or at minimum cost of materials and labor. Where there are many changes on a building the contractor who is working on the lump-sum basis may legally and properly claim compensation for extras, which may run into large figures. When the builder's fee has been fixed in advance, however, any changes which are suggested by him, or which the architect or owner may decide to make, do not add to this fee.

The element of time saving is a particularly advantageous factor. On a fixed-fee basis the contractor may proceed immediately with the purchase of materials and the arrangement of sub-contracts and may go ahead with excavation, foundation, and other work possible without waiting for finished working drawings.

On the two contracts to which we have referred, it is claimed that approximately two months were saved in the time of delivery of the completed buildings. In one of these instances this saving of time meant that the rentable space was made available

during the renting season, in time to create income on a heavy investment and to arrange advantageous leases.

After carefully studying the working of the fixed-fee contract, we feel that architects will do well to give this subject serious consideration. It is particularly important at this time that every possible means for cutting down the cost of construction should be developed, in order that additional building may be encouraged. Competitive building on a lump-sum basis does not always represent the lowest actual cost to the owner. The manner in which some architects and builders are cutting down building construction cost today involves:

1. A careful study of the most economical building materials and equipment, from the viewpoint of labor cost as well as the actual cost of materials.
2. In obtaining sub-contracts on the work the number of bidders is materially increased, in order that a wide range of selection may allow for closer bargaining.

It is evident that some architectural firms are so organized that they can undertake the economical arrangement of sub-contracts and material purchases. On the other hand, there are many architectural offices not equipped, by either knowledge or experience, to delve deeply into the subject of sub-contract figures and actual prices of materials in necessary quantities. Here the service of the contractor under the fixed-fee plan of operation will prove invaluable. This arrangement provides the necessary time to develop keen competition on the part of sub-contractors and to locate material supplies available for the work at the lowest costs which the market affords. The material markets today may be termed "spotty." Here and there will be found odd lots of material which the architect may have no means of knowing about, but of which the builder may be aware because of his more intimate relations with material dealers and transportation possibilities.

We believe that the greatest benefit offered by the fixed-fee type of contract is that the contractor's force really becomes the necessary skilled branch of the architect's service to the owner. Thus the need of self protection, which is necessary under a lump-sum contract, is eliminated as far as the building contractor is concerned. He can at once become an active and dependable partner of the architect, and join forces as an interested party in getting the best results under difficult conditions. Naturally, not every building contractor's organization is fitted for such work, nor can every organization be depended upon to render the necessary services under this form of contract, so it remains for the architect to recommend the services of only organizations bearing sound reputations for work performed under these conditions. It may be remembered also that a number of comparatively new contracting organizations have been developed to work on this basis. Here the personnel of the organization should be the deciding factor, and if it seems that such an organization is composed of individuals possessing broad experience in this type of work, the possibilities presented in employing such an organization should not be overlooked.

The first requirement, therefore, when an architect selects a building organization to work on this basis, should be that the builder has a reputation to protect or a record to make. If this is his greatest incentive, it means the introduction of what loaning institutions term a "moral risk"—an element which is every day coming to play a more important part in commercial transactions.

An Organization Which Renders a Complete Building Service

AT this time the architectural profession is giving serious consideration to various important details of organization development, such as service, publicity and advertising. We have, therefore, read with interest a booklet recently issued by the firm of Preston J. Bradshaw, Member A.I.A., St. Louis, entitled "Modern Architectural Practice," which contains a brief description of the organization, its scope and methods.

The opening paragraphs constitute a definition of service as it applies between the architect and his clients. Before actually commencing plans, the first element of service covers the economic phases of the problem, the various elements of this preliminary service being:

To thoroughly investigate and analyze a building problem.

To suggest the class and size of structure most appropriate for the particular site.

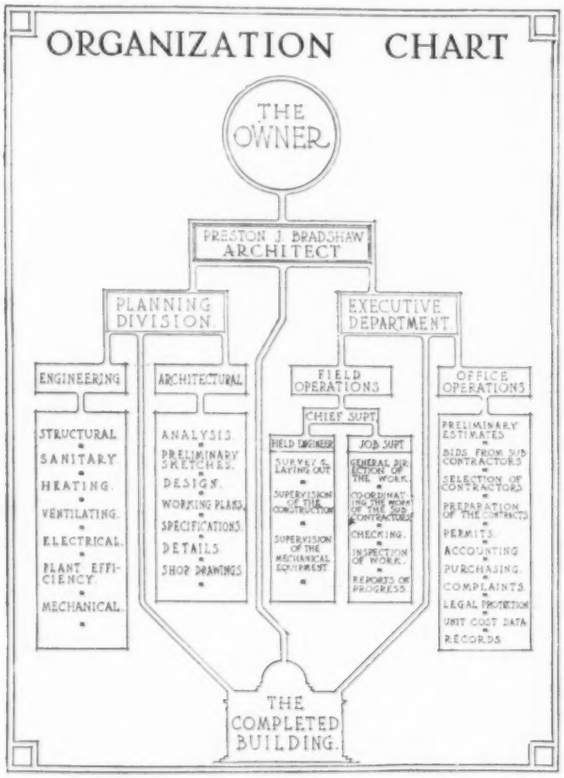
To survey neighboring buildings and approaches.

To recommend a building suitable for the class of tenants to be accommodated.

To make a thorough analysis of materials best adapted to the program contemplated, and then to submit a comprehensive report of findings.

An interesting method of keeping closely abreast with building costs is in use in this office. A group of key plans for typical buildings is maintained, on which bids are taken periodically in order that an accurate cubic foot cost basis may be available for use in estimating the costs of new buildings of various classes. This, or a similar method of maintaining dependable cost figures, will be found invaluable in every active office, and we have already laid stress repeatedly on the importance of having accessible dependable estimates of costs during the period of the development of plans and designs, in order that the client may not be disappointed when final costs of building are obtained.

After preliminary plans are drawn, in this St. Louis office, they are passed on to an engineering department where the structural, heating, ventilating and sanitary details are incorporated. Meanwhile, as the plans develop, specifications are written and costs are taken in order to eliminate changes in the final plans. It is interesting to note that this organization maintains an extensive reference file of plate illustrations, showing new build-



ings developed in all sections of the country, and that cost data is incorporated in this file, wherever possible.

The work of this organization does not end with planning and supervision; a special department has been developed to act as agent for the owner in carrying out the construction, through a series of sub-contracts, which means dispensing with the services of the general contractor. Under this sub-letting method of handling building projects, these several functions are undertaken by the architect, after complete plans and specifications have been prepared:

Securing bids from reputable sub-contractors, covering entire operation.

Checking these bids with the specifications and quantities.

Listing the bids, and submitting them to the owner for his approval.

Preparing proper contracts between the owner and the sub-contractors.

Obtaining bids, and surety bonds when required.

Securing all necessary permits from the building department, street department, etc.

Auditing all accounts, and issuing certificates for payment to the various sub-contractors.

Operating a complete field force of superintendents and engineers.

Expediting the work of sub-contractors to eliminate delays.

Preparing both progress and completion reports on the work.

Securing clearance on bills, and waivers of liens against the property.

The benefits under this plan of operation are claimed by the architects to be:

Saving of time by dealing directly with sub-contractors.

Immediate and uninterrupted communication between the drafting room and the work on interpretation of plans.

Absolute jurisdiction over details, time of completion, and the distribution of funds, as the sub-contractor comes direct to the architect for certificates of payment, thus permitting enforcement of proper and speedy execution of the contract.

The direct selection and purchase of all materials which enter into the construction of the building.

This is a firm of architects—not contractors in any sense of the word. They do not employ labor, but act as agents for the owner in the employment of sub-contractors, and all the elements of service as given by this office are in entire accordance with the principles laid down in the recently published Handbook of the American Institute of Architects.

While every architect is not in a position to maintain an equally extensive organization, the principles indicated by the scope of the service here described may be applied to the business of every architect, regardless of the volume of work which passes through this office. We are informed that throughout the Middle West the sub-contractor method of carrying out the construction of moderate cost dwellings is employed in at least one-half of the architects' offices. In some cases which have been brought to our attention, architects working for speculative builders and real estate developers are carrying out complete designs of dwellings and are letting sub-contracts for construction as agents of the owners. The architect then supervises the work and co-relates activities of sub-contractors in order that construction may be carried out quickly and with the least possible friction.

In building moderate cost dwellings, it is customary to divide the construction into five or six sub-contracts. Bids are taken on these, which include the provision of necessary materials. The contracts are then placed, not always with the lowest bidder, but on the conditions which seem to insure the most satisfactory service from the viewpoint of the owner. The customary charge on small house work of this nature seems to be 10% to cover the complete service of the architect.

A Group of Stores at Southern Pines, N. C.

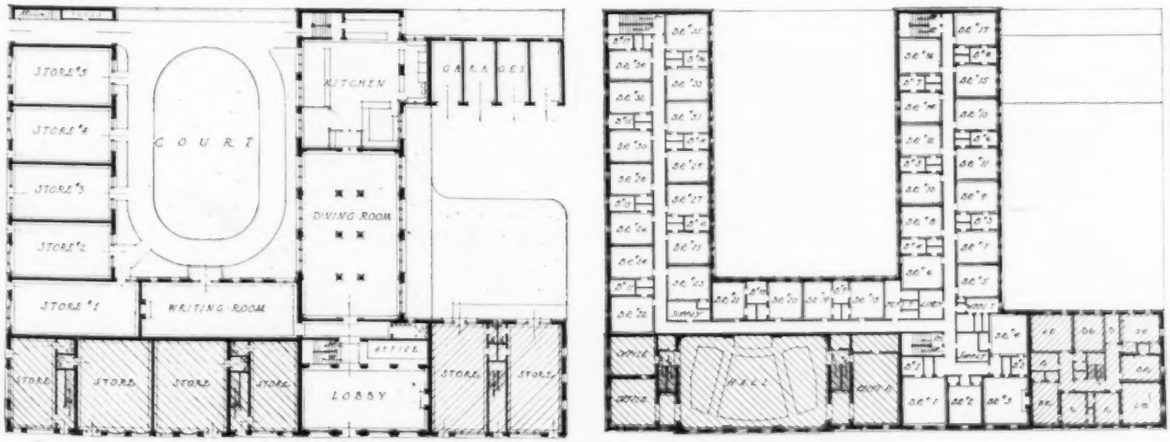
AYMAR EMBURY II, ARCHITECT



Block Containing Hotel and Stores on 190-Foot Frontage

MUCH of the badly mixed appearance of the buildings facing the streets of American cities and towns is due to lack of co-operation on the part of property owners for harmonious development upon some definite plan. Each owner avails himself of every man's inalienable right to build what he will, and the result is the heterogeneous rows of buildings which may be studied in almost any town. A plan by which each building would be a part of a well arranged development would mean a successful architectural result, which cannot fail to increase the value of each of the individual holdings as well as of the locality in general.

An instance where co-operation has achieved highly successful results exists at Southern Pines, N. C., where three owners agreed upon a form of treatment in which each building should contribute its share to the appearance of the group as a whole. The two-story building upon the corner at the left, which seems to be three buildings, belongs to one individual and contains stores upon the ground floor and a hall with reception room and suitable offices above. The three-story structure farther to the right is the front of a hotel which occupies the greater part of the block and which faces also upon the side street. The plans show stores upon the lower floor and the hotel departments elsewhere, all surrounding an open court which provides light and air as well as a private entrance to the hotel and delivery entrances for the stores. By this plan most of the bedrooms are away from the railroad which is across the street from the front of the hotel. The two-story building at the right of the group belongs to a third owner and contains two stores and two apartments, the space behind being occupied by four garages which are reached from an alley.



First and Second Floor Plans, Indicating Property of Three Owners

EDITORIAL COMMENT

THE YOUNG MAN IN THE PROFESSION

MUCH attention has recently been directed to the problem of the relations of the draftsmen to the profession; the obligations resting upon the architect in giving draftsmen in his employ opportunities for acquiring a broader and more general conception of professional service, and the means for supplying in another manner the advantages that are held out as an inducement to extend the scope of the so-called draftsmen's union.

Organizations within the profession or among men so closely identified with it as draftsmen, which partake of the nature of groups for collective bargaining will certainly be detrimental to the good of architecture. The work of any of these men more nearly approaches an art than a trade and its success depends upon a healthy individual enthusiasm which is quite contrary to the principles of mass action as now maintained by unions.

The subject, however, cannot be dismissed with this statement and allowed to take its own course. There is an undeniable sentiment today that results are not produced by the will or power of any one man; the problems are too large and complex to make this possible. Work of any kind accomplished today is the result of co-operation on the part of many, each contributing some worth while element. This is recognized by those who fill the various roles and it is but natural they should consider it fair and proper that their function and value be admitted.

The average draftsman is a man of good breeding and intelligence who has a fair knowledge and appreciation of architecture. Most men in becoming draftsmen do so with the aim and intention of ultimately becoming architects; certainly men graduated from the architectural schools who must of necessity acquire their practical experience through drafting have this intention. In how many cases, however, do they find opportunity for getting the necessary knowledge and experience to become architects, or in fact well-rounded assistants in their employers' offices? They are engaged without any contract; their stay in the offices depends usually upon steady maintenance of work; if there is a lull between commissions, they are dismissed and new a force taken on when work picks up again.

It is not unreasonable to expect that after a number of years of such employment the enthusiasm of becoming architects has been dulled and if they remain in the profession, they are reconciled to remaining employes and take only such interest in their work as is necessary to keep their employment. The best of architecture cannot be produced with assistants of this calibre, neither will it be produced if these men become associated with unions that by means of collective bargaining secure only monetary advantages.

There is a middle ground that will prove effective; it will require a real and lively interest on the part of architectural societies—perhaps the Institute and its Chapters—but the fundamental interest which every draftsman has in architecture supplies a beginning of substantial character. We believe a model for accomplishing much good has been set up by the Boston Society of Civil Engineers and because of the similarity of the problem in both professions the chief points of its program are outlined.

In its effort to better its service, the Boston society considered means of securing the interest of the young men. Conferences were held with them, resulting in the conclusion that discussions of designs and designing methods would prove of interest and value. It was further determined that the society work of the young men should be managed by themselves and to accord with their convenience and desires. A nucleus of about forty men was recruited chiefly from the designers; some were already members of the society and the others became members to secure the advantages of the young men's section.

The meetings are arranged to suit the ideas of the men themselves. They begin at 6 o'clock and last about two hours. About half the time is given to the presentation of a subject and the balance to discussion. The sessions are entirely informal, manuscripts of the papers are not required and no stenographic record is kept. Questions are encouraged and the blackboard and stereoptican are at hand to illustrate difficult points.

It has been found that the greatest interest is aroused in meetings in which actual designs are discussed rather than pure theory. It is usual for the speaker to select a design that has recently been developed in the office with which he is connected and the discussion that follows results in a general interchange of ideas that is most helpful.

The Boston Society has wisely recognized two important qualities of youth. These young men are energetic and they want to do things, and furthermore they want to do things in their own way. By encouraging these qualities and placing confidence in their ability to carry them out, a most successful section of the society has been instituted and in addition to enlarging the membership it makes possible in the young men a keen professional interest in their work which is reflected in their office associations.



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Manufacturers' Catalogs and Business Announcements

ANNOUNCEMENTS

Murphy & Dana, architects, announce that R. H. Dana, Jr., and J. Duncan Forsyth have withdrawn from the firm and that the three remaining members will continue the practice of architecture under the name of Murphy, McGill & Hamlin, 331 Madison ave., New York, and Union Building, Shanghai, China.

Ingham & Boyd, architects, announce the removal of their offices to the Empire Building, Pittsburgh.

Dubin & Eisenberg, architects and engineers, announce the removal of their offices to Suite 720, Browning Building, 14 W. Washington street, Chicago.

Chester E. Wolfley wishes to announce his withdrawal from the firm of Wolfley & Eliel, architects and engineers. He will continue the practice of architecture under the name of Chester E. Wolfley —Architect, with temporary offices at 610 Stewart Building, Rockford, Ill. Manufacturers' samples and catalogs are desired.

Alfred H. Wheeler, architect,. announces his removal from the Globe Building to 407 Metropolitan Bank Building, 5th & Cedar streets, St. Paul, Minn.

Horace G. Cook, Jr., announces the removal of his office to 716 Miners Bank Building, Wilkes Barre, Pa. Manufacturers' samples and catalogs requested.

Miss Marcia Mead, architect, formerly practicing under the firm name of Schenck & Mead, will continue the practice of her profession under her own name at 248 East 34th street, New York

The architectural practice formerly carried on under the firm name of Freney & Jackson, 51 Leavenworth street, Waterbury, Conn., will be conducted by Thomas M. Freney at the same address.

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Walter Thomas Williams, architect, announces the removal of his office to 41 East 42nd street, New York.

Charles F. Allen, architect, announces the removal of his office to Room 206, Touraine Building, Ft. Worth, Tex. Manufacturers' catalogs and samples requested.

Messrs. Bowdoin & Webster, architects, formerly at 299 Madison avenue, announce their removal to 70 East 45th street, New York.

Townsend, Steinle & Haskell, Inc., architects, have removed their offices to 8 West 40th street, New York.

Kendall, Taylor & Co., architects, announce the removal of their offices to 142 Berkeley street, Boston.

James E. Camassa, architect, formerly at Worcester, Mass., after service in the U. S. Army, resumes practice with an office at 196 Hanover street, Boston.

Monaco & Wright, architects, announce the removal of their offices from 168 N. Michigan avenue to 721 N. Michigan avenue, Chicago.

Henry C. Pelton, architect, announces the removal of his offices to 151 West 42nd street, New York.

Henry T. Child, architect, has removed his office from 29 Broadway to 280 Madison avenue, New York.

The Dahlstrom Metallic Door Co. announces the removal of its offices from the Consolidated Gas Bldg. to the new Cunard Bldg., 25 Broadway, New York.

Alfred C. Clas wishes to announce that he has entered into a partnership with John S. Shepherd and Rubens F. Clas for the general practice of architecture under the firm name of Clas, Shepherd & Clas, at 202–206 Colby-Abbot Bldg., Milwaukee.

John Noyes announces that he has opened an office for the general practice of landscape architecture and engineering at 119 North Seventh street, St. Louis. Manufacturers' catalogs requested.

James T. Narbett, architect, has opened an office at Room 503, Easton Bldg., Oakland, Calif., for the practice of architecture. This office will be operated in conjunction with his Richmond, Calif., office.

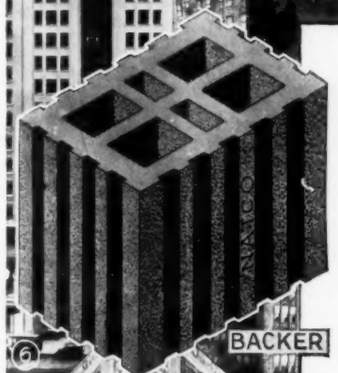
George A. Bagge announces the opening of an office at 299 Madison avenue, New York, for the practice of architecture, under the firm name of George A. Bagge & Sons.

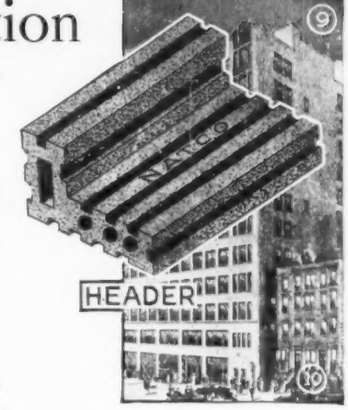


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4.	Polytechnic Preparatory Institute	Brooklyn	Geo. Mertz	Lord & Hewlett
5.	Wurlitzer Bldg.	116 W. 42d St.	G. A. Zimmerman, Corp.	Maynicke & Frankel
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7.	Telephone Bldg. C. 1920 by I. Underhill	Pearl & Broad Sts., N. Y. C.	Cauldwell-Wingate Co.	McKenzie, Vorhees & Gmelin
8.	Warehouse	Morton & Greenwich Sts.	Cauldwell-Wingate Co.	Renwick, Aspinwall & Tucker
9.	Ambassador Hotel	51st & Park Ave.	Thompson-Starrett Co.	Warren & Wetmore
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11.	16 Story Bldg.	4th Ave. & 28th St.	Samuel Thomason	W. Haefeli
	Pennsylvania Hotel	7th Ave. & 32d St.	G. A. Fuller Co.	McKim, Mead & White
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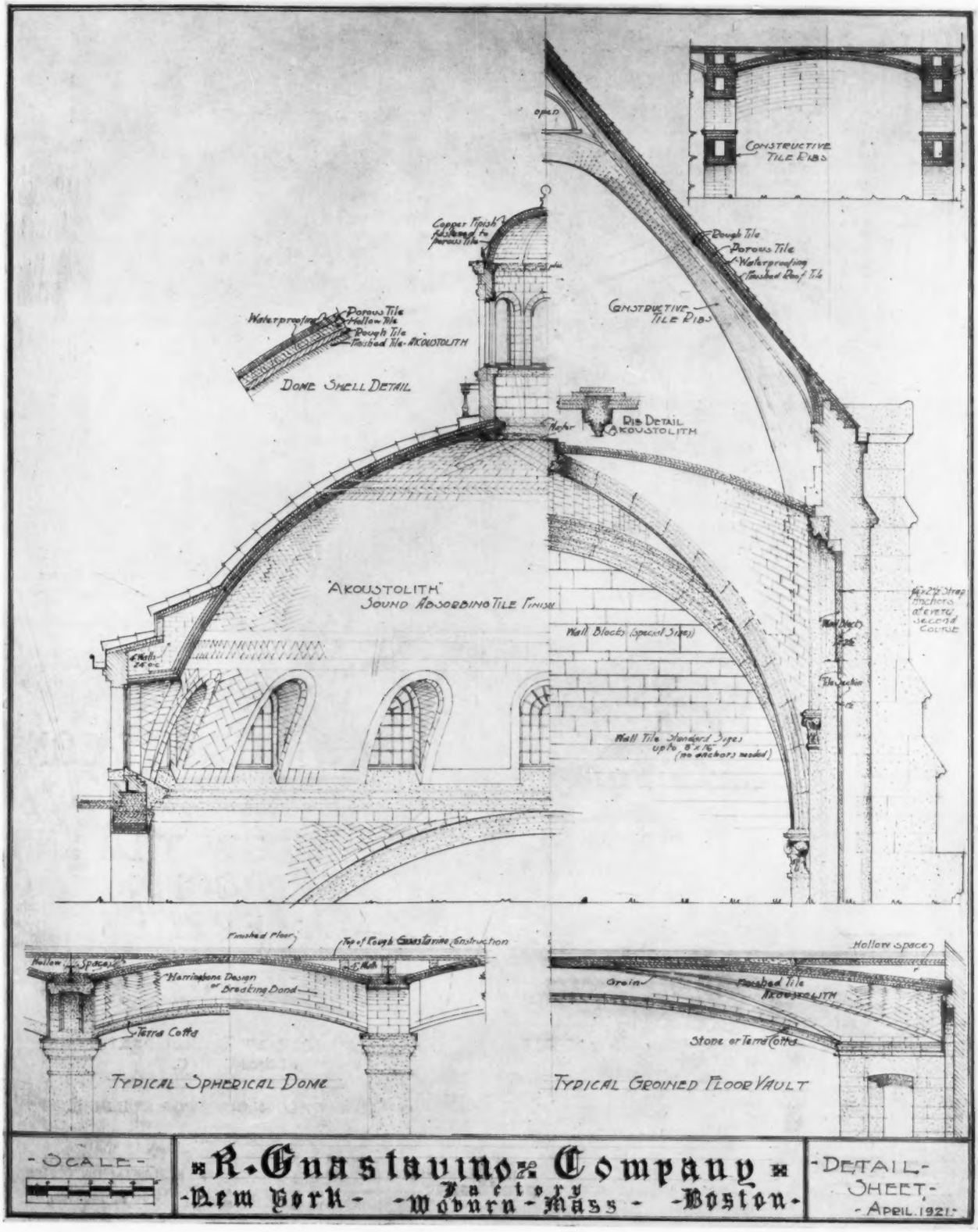
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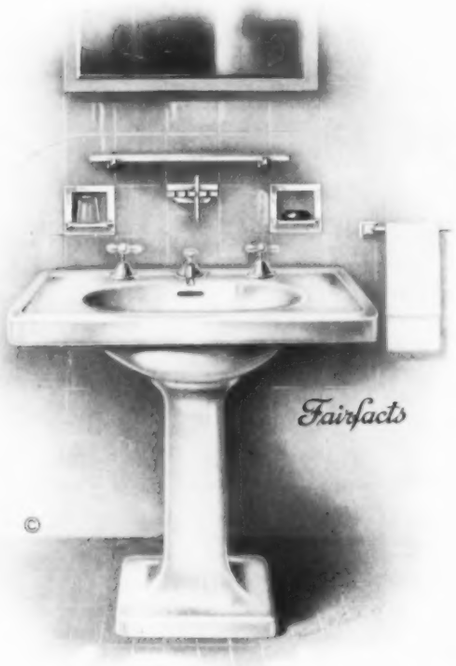
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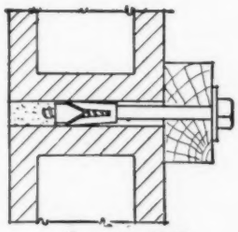
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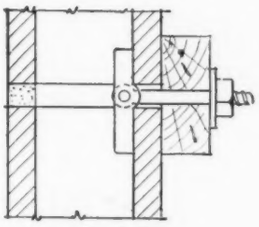
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Boston-9
294 Washington St.

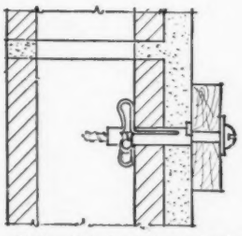
Fastening Furring, Grounds and Nailing Blocks to HOLLOW TILE



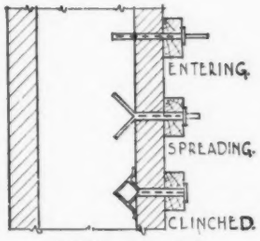
Expansion Bolt



Toggle Bolt



Collapsible Steel Screw Socket



Self Clinching Nail

Wood nailing blocks should never be built into Hollow Tile walls. Use of expansion bolts, toggle bolts, collapsible steel screw sockets, self clinching nails, spot grounds, and anchor bolts as illustrated insures fastenings at the right places with a great saving of time.

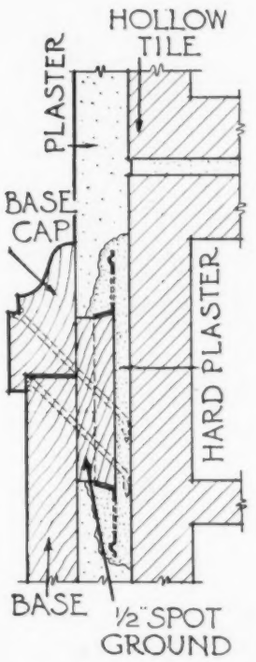
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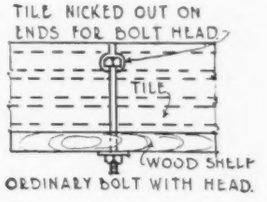
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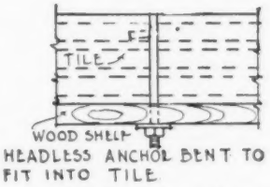
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MASTERTILE *The trade mark of The Hollow Building Tile Association and your assurance of a product made by an Association member.*

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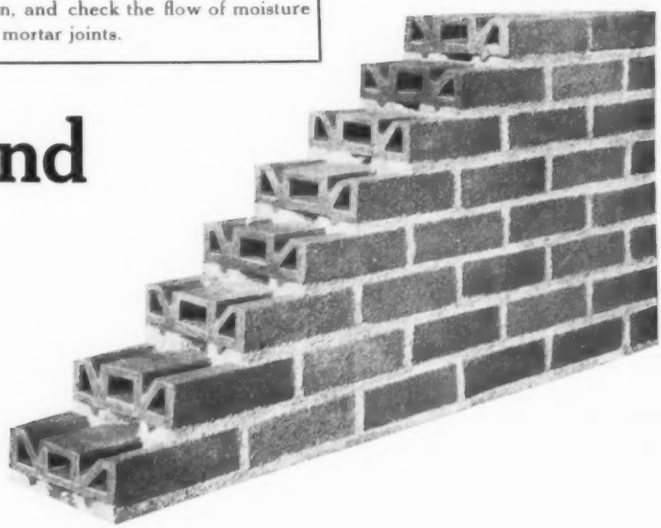
Representing America's Leading Manufacturers

CONWAY BUILDING · CHICAGO



"Fisklock" brick is scientifically shaped to reduce labor cost, provide heat and cold insulation, and check the flow of moisture through mortar joints.

FISKLOCK
REG. U. S. PAT. OFF.



A Thousand Years of Proof

High repair bills don't just happen—they are the unescapable penalty of inexperienced or faulty choice in the beginning.

There's a thousand years of proof that face brick is unchanging—indifferent to rain, sun, fire.

"Fisklock" is a brick of the same quality; but improved mechanically by modern engineering.

A "Fisklock" brick has a standard 8″ x 2¼″ face, yet saves labor expense because it is equivalent to a face brick and a common brick.

A "Fisklock" wall is cooler in summer and warmer in winter—it contains a multitude of horizontal "dead-air" cells—three in each brick.

It is a dryer wall; moisture checks prevent water working through mortar joints.

It is a stronger wall; every "Fisklock" brick is also a header. There are no fillers or backing to be carelessly tied in. The inside of the wall is integral with the face—of the same quality, strength and appearance.

It is a cheaper wall—costs less than any other face brick wall whether solid or veneer.

It is a better wall—unequaled for economy, dryness, heat insulation and strength.



HARDONCOU RT-
FISKE PATENTS

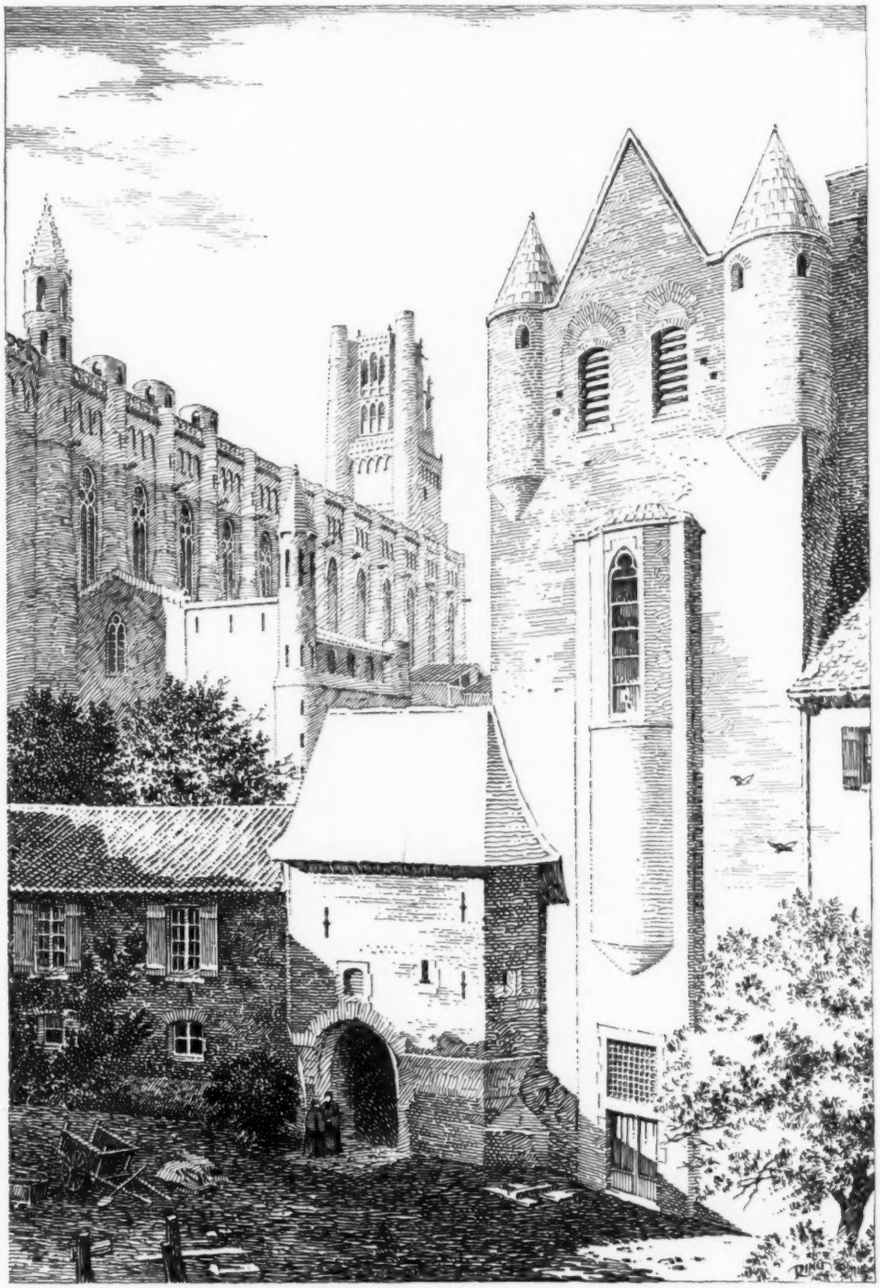
8 x 2¼ x 8

FISKE & COMPANY, Inc.
BOSTON, MASS.

NEW YORK WATSONTOWN, PA.

"Tapestry" Brick
REG. U. S. PAT. OFF.

Face Brick *Fire Brick*



A·F·B·A
USE FACE BRICK
—it Pays

Western Tower from Court of Palace, Cathedral of Sainte Cécile at Albi, South of France. Foundations laid 1282. Consecrated 1480. All exterior walls of brick.

THE brick craftsman long ago learned to make a durable building material. Judged from the centuries that many brick structures have stood, it is not an exaggeration to say that brick is practically indestructible.

With durability assured, American manufacturers are bending all their efforts toward extending the artistic possibilities of face brick, and toward producing their wares more efficiently and economically.

Their aim is constantly to produce a wider range of product at reasonable prices, in order that the architectural genius of the country may have a wider field for expression.

Any member of this association is always ready to co-operate with the architect in solving his face brick problems.

AMERICAN FACE BRICK ASSOCIATION

1151 WESTMINSTER BUILDING · CHICAGO, ILLINOIS

THE "ACE" AMONG RED FACE BRICK

for the past 25 years

"BRADFORD REDS"
have never been rivaled as the leading product of the Red Face Brick industry in America.

RELIABLE QUALITY

Just One Good Brick After Another

Best known methods of manufacture, modern machinery, expert workmanship, careful inspection for defects and skilled selection of shades, together with the use of the remarkable Bradford Shale, all combine to maintain this enviable reputation.

Manufactured Exclusively By

BRADFORD BRICK & TILE COMPANY
2 Main Street, Bradford, Pa.

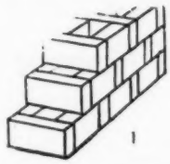
We also manufacture Hollow Building Tile

When Face Brick
Are Made Better
"BRADFORD REDS"
Will Still Be Best

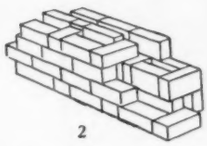


IDEAL WALL

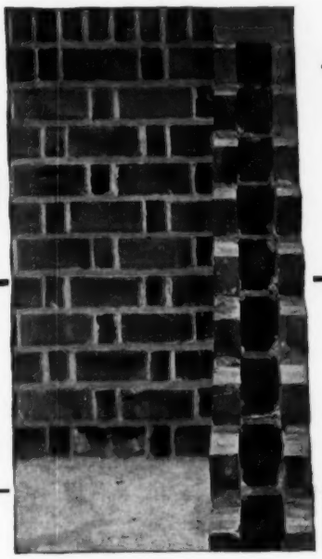
Cuts Cost of Brickwork ⅓

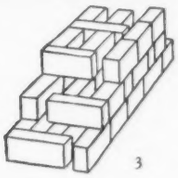


1



2





3

1 8-inch Ideal All-Rolok Wall.
2 12½-inch Ideal Wall, Rolok backing. Headers every third course.

3 12½-inch Ideal All-Rolok Wall. Double air spaced.

Ideal Wall Puts Brick Home Within Reach of the Average Man

THIS new-old type of wall overcomes the only objection to the Brick home—first cost—simply by reducing *excess* wall *strength* while retaining all the other advantages of Brick construction.

The Ideal is the cheapest, yet strongest, hollow wall ever conceived; there are 2¼ inches of solid material at its thinnest point; every other Brick is a reinforcing Brick. Its factor of safety is unquestioned. It is better for residence work than any other type of masonry wall in producing an absolutely dry interior without the necessity of furring. It is also well adapted to garages and all small structures having ordinary floor load.

The Ideal Wall may be laid in any bond or pattern. Any wall thickness. Its cost is 33⅓ per cent less than by laying Brick the old way.

Your nearest Common Brick Manufacturer will gladly furnish you with further details of Ideal Wall construction including working drawings of all types of this wall, or send direct to

The Ideal Wall may be built in 8-inch and 12-inch and 16-inch thickness.

Uses any standard Brick—Common or Face—or combinations of the two.

Meets every engineering requirement.

Particularly adapted to residence construction, garages and small buildings.

Permits many variations in the width, color and treatment of mortar joint—any bond or pattern.

Completely dry—an air current constantly courses through it.

It saves brick, mortar, labor, time.

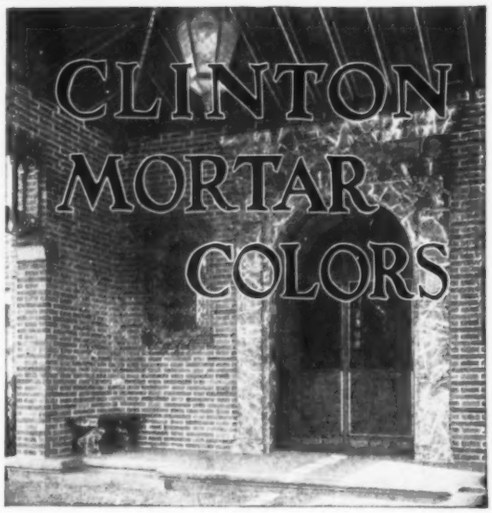
Gives permanent, fire-safe construction at cost of frame.

Simple to erect—bricklayers lay a greater area of wall per day.

One or more air spaces.

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The Ideal Brick Hollow Wall



have been in use since 1887 in nearly every city east of the Mississippi and north of the Ohio River.

Their record for strength and permanence is written clearly through the years. Building material dealers everywhere carry Clinton Colors in stock ready for immediate delivery.

We are always glad to give architects the names of our dealers who, in turn, will be happy to point out structures whose appearance proves that neither time nor climate can impair the shade or strength of our product.

CLINTON METALLIC PAINT COMPANY

Dugway Road, Clinton, N. Y.



Velvety Texture

Soft Shades of Red and Brown

CLOISTER BRICK

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are installed in units of single and pairs of sash, each of which is entirely separate from, and operated independently of, its neighbor, regardless of the number of sash in the opening.

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ARCHITECTS are invited to send for our catalogue of complete details - filing size.

Andrew Hoffman Mfg. Co.
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TRACON TRAVERTINE STONE
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PINK KASOTA STONE

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These are recommended for their rich, warm tone and their attractive texture.

Especially recommended for distinctive exterior and interior construction, where only the highest class of architecture can be achieved; where quality and color scheme are most essential and above all cost an after-consideration.

They are natural products of U.S.A., we are proud to state, and contend that no foreign stones can compare with them.

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YOU could not suggest to your clients more enduring memorials than those of Barre Granite.

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We gladly place this experience at your service.

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Booklets on Indiana Limestone will be mailed on request

Because of its impressive stateliness and its extreme durability—the Drake faces Lake Michigan—Indiana Limestone is used in the construction of this beautiful hotel. Not only was Indiana Limestone used in the exterior construction, but in the Lounge exquisitely carved mantels are also carried out in this warm-hued, natural stone and the lobbies and foyer are an excellent example of the undeniable merit of Indiana Limestone for interior decoration.

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A structure built of granite, whether it be a home, school, bank, office building, public building or memorial, stands out from its neighbors, just as a Rembrandt, a Gobelin, a Chippendale, or any other hand wrought masterpiece stands out from imitations or machine made substitutes. They possess, in common, that individuality recognized by the artist and sensed by the layman.

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See our Catalogue in Sweet's—pages 177-192
Send for Booklet No. 1—Architectural Granite

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But how often is this "artistic picture" ruined by the loss of one or more of the trees that form an essential unit of the house-landscape composition!

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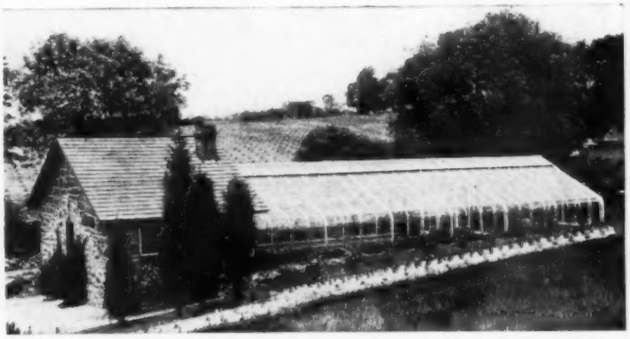
For the home of refinement, the club or public places, Leavens furniture adapts itself to the most charming and practical interiors.

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GREENHOUSES

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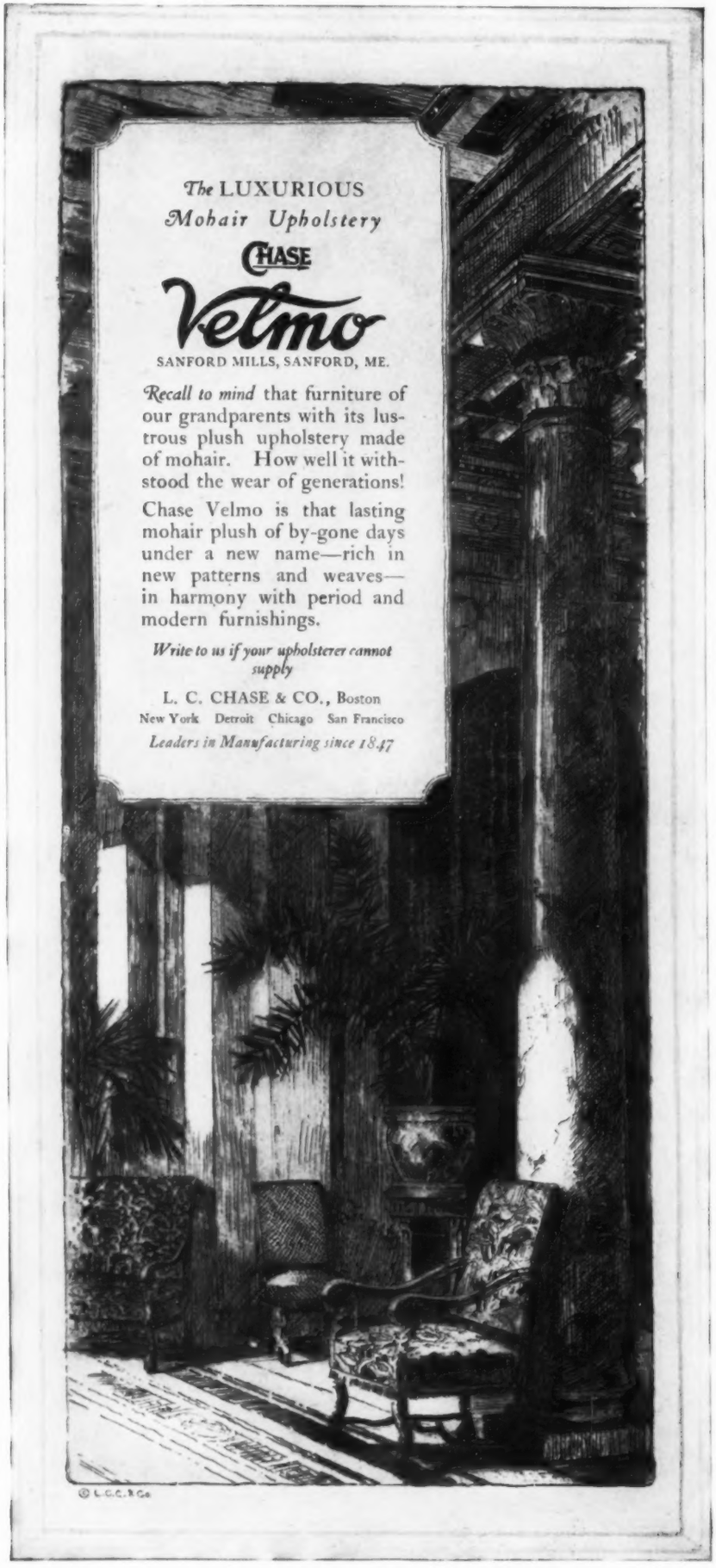


The Estey Residence Organ

This picture shows the living room of a house in which the Estey Organ is installed. Note the grille through which the organ is heard. Architects will find a pipe organ an interesting problem for their art, and all of the experience of the Estey Organ Company is at the disposal of any architect who wishes to recommend the Estey Residence Organ to a client.

THE ESTEY ORGAN COMPANY

Brattleboro, Vermont



Choose for Upholstery
VELMO

—with colors guaranteed sunfast
—with the beauty and harmony of quiet refinement
—with the luster and richness of silk
—with remarkable immunity from spotting
—with first cost more than wool, but value in service and satisfaction far greater.

One of a series of consumer-appeal advertisements which will appear during 1921 in national mediums.



Blackbeard, the Pirate, from an old print. The background panel is a representation of the "Coast of Guiney", showing ships captured by Captain Barthelemew Roberts and was drawn by B. Cole in 1721

WHEN THE JOLLY ROGER FLEW

AMONG the varied influences affecting American decorative art it seems strange indeed to find included those of the early buccaneers and pirates. Yet so it is; and accordingly it is interesting to turn a glance in their direction.

They sprang in direct line from the ancient privateers first countenanced by Queen Elizabeth; from Frobisher, Davis, Drake, in fact. Taking advantage of the unsettled conditions created by the privateers' activities, the buccaneers followed. The greatest of these was the famous Captain Henry Morgan who plundered Panama to the tune of 260,000 pieces of eight and who destroyed 2000 cedar houses "of magnificent building" for which he was actually created Sir Henry Morgan.

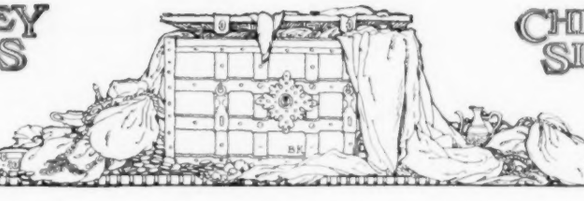
Beside this personage, Blackbeard and Captain Kidd appear tawdry enough; yet it is to such as these that America is indebted for the first beauty of her interior settings. Through them the island of Madagascar, mart and pleasure-ground of the sea plunderers became stocked with pirate-treasure; and thence the shrewd merchants of New Amsterdam quested, exchanging their cargoes for those of the pirates. Thus were the quiet houses of New Amsterdam bedecked with carpets, carved furniture and ivory, rare fabrics of silk and cotton, jewels and gems of the costliest workmanship.

In this way even the old marauders are responsible for bringing to our land influences of beauty which have helped form the foundation of our heightened standards of taste today, and so doubtless, in a due degree, have proved a far off influence in the appreciation given to the fidelity and beauty of design found in the Decorative and Upholstery Silks produced by Cheney Brothers.

CHENEY BROTHERS

4th Avenue at 18th Street, New York

CHENEY SILKS



CHENEY SILKS

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To specify linoleum cemented down as a permanent floor over felt paper is to anticipate the owner's requirements and reflect your sound judgment as well. But be sure it is Armstrong's Linoleum; then there can be no doubt as to his satisfaction — and yours. Every yard is fully guaranteed; any goods found defective in manufacture will be replaced without question.

For your convenience all the important data concerning linoleum floors and their various uses has been published in the form of a ready reference handbook. You should have a copy in your files. Ask for "Armstrong's Linoleum Floors." There is no charge.

Armstrong Cork Company, ***Linoleum Department,*** **Lancaster, Pa.**

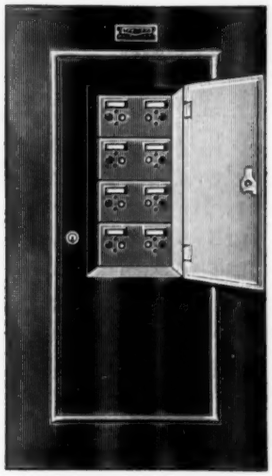
Armstrong's Linoleum

CIRCLE A TRADE MARK REG. U.S. PAT. OFF.

An installation of 610 sq. yds. of Armstrong's Plain Brown Linoleum in the Executive Offices of the Studebaker Corp., New York City. The goods were cemented down over felt paper on a concrete base.



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Benjamin Electric Mfg. Co.

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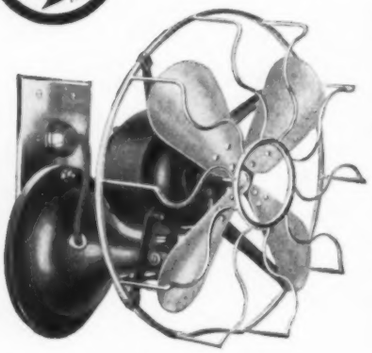


Catalog S-3 is really a treatise on modern centers of distribution for electric lighting circuits. Prepared especially for the use of draftsmen, engineers and electrical contractors. Send for a copy today.

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HANGER OUTLETS

form the only efficient and safe fan installation



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Safe—because the fan is securely held without vibration or strain on wall or outlet; because it uses no trailing cords to be tripped over or pulled loose.

During winter months this outlet is available for use with an electric heater. Any electrical appliance may be plugged into it.

Ⓕ Hanger Outlets are necessary equipment in any home, office or factory. You will serve your clients best by specifying them.

Ask for our Folder A. F., full of information on Hanger Outlets

Frank Adam Electric Co.

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In buildings equipped with the Cutler Mail Chute letters can be mailed as they are ready without the use of messengers the misuse of elevators or loss of time.

Made in our own factory insuring prompt completion and maintenance of high quality.

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can be supplied with permanently attached luminous pendants.
They are not subject to removal or theft.
Particulary adaptable for hotels where lighting systems are unfamiliar.

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Steel Casements

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Made in varied designs to meet all conditions

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The success of Elastica does not rest upon boastful promises but upon definite claims actually fulfilled. The beauty of its fadeless finishes, the time-resisting qualities of its composition are facts that every owner of an Elastica building will verify.

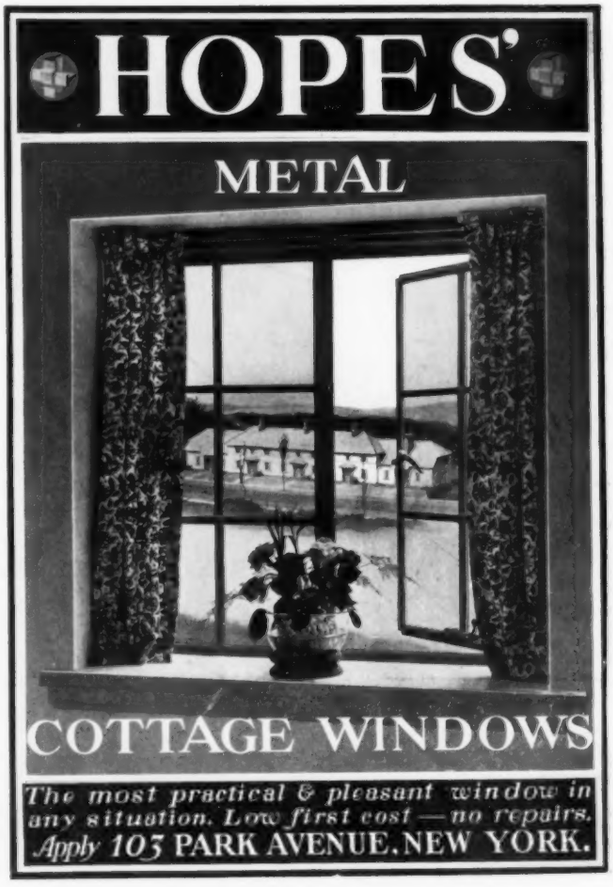
Elastica may be satisfactorily applied in extremes of temperature — winter or summer.

Wisconsin Lime & Cement Co.
Conway Bldg.
Chicago

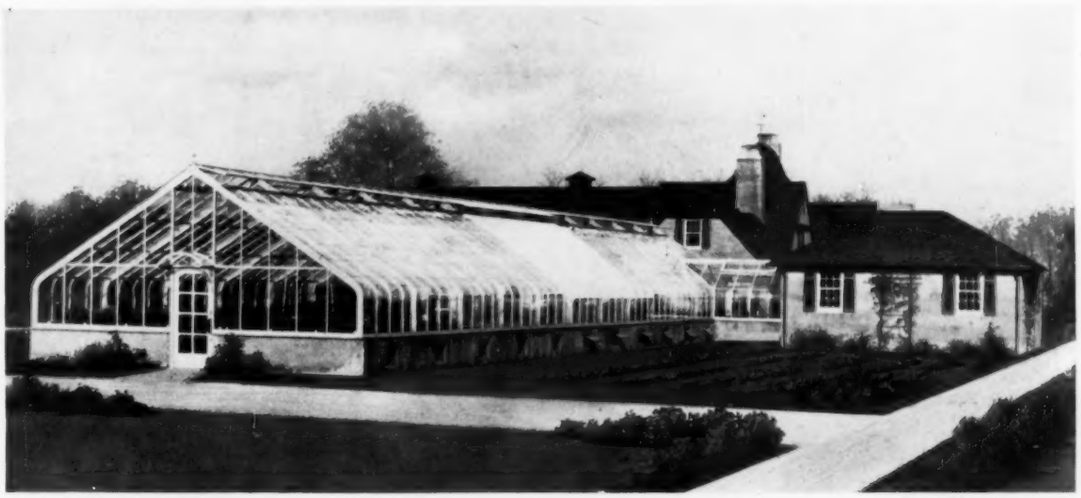
American Materials Co.
101 Park Avenue
New York City

Art Stucco Materials Co., 12854 Oakland Avenue, Detroit

ELASTICA
THE IDEAL EXTERIOR WALL COVERING



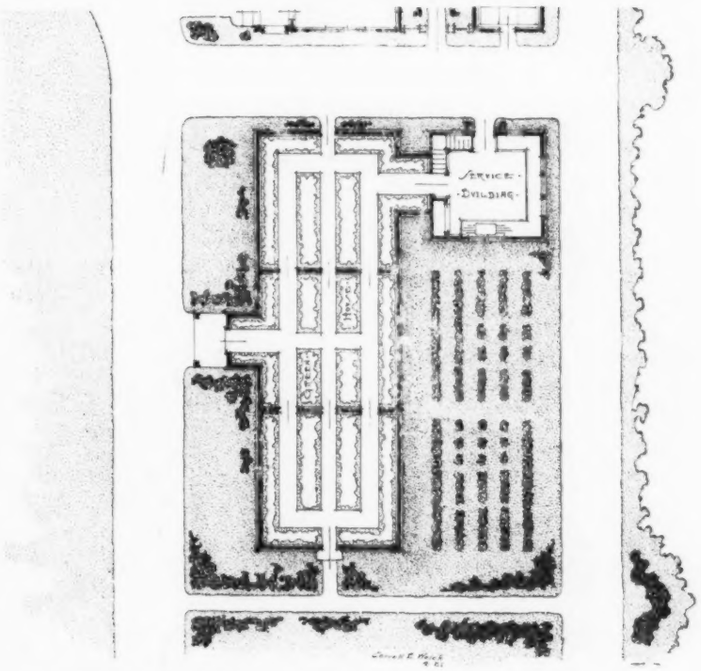
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Turner was a consistent user of Whatman Drawing Papers

Turner Chose Whatman

BECAUSE his poetic conception of color could be translated only on a surface which would hold close-laid tints without danger of overlapping.

And Turner, masterful in his color control, careful indeed in his selection of materials, was *only one* of the great water-colorists who found the desired response to their genius in

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Genuine Hand-made Drawing Papers

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IN this splendid new apartment house at 290 Park Avenue, modern in every detail, Reliance fireproof doors, window frames and sashes were installed throughout in accordance with the specifications of Warren & Wetmore, Architects.

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REPRESENTED IN ALL PRINCIPAL CITIES



A water scene in Holland

Not today, perhaps, nor tomorrow, but some day the name Dixon's Eldorado and a vision of its work will flash across your memory when you are ordering pencils. It cannot be too soon. The importance of choosing the right pencil is well-known to every true artist.

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JOSEPH DIXON CRUCIBLE COMPANY

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ARCHITECTS employ American Walnut for the Interior Trim of fine buildings because of its supreme beauty of grain, and stanchness—it neither swells, shrinks nor warps.

But its chief charm lies in the many beautiful, varied and distinctive figure effects produced—never seemingly two alike—*The Cabinet-wood of Infinite Variety.* Truly American Walnut deserves to be styled the favorite medium of expression for fine interior woodwork.

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VAN DYKE 6B
(softest & blackest)
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The Lead That Leads

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Years of use have proved its durability—its economy

Produces a rich, dull, artistic finish over natural wood or stained work. Accentuates the beautiful grain of the wood and its coloring, with a freedom from defects too often the result of wax finish.

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Build the roofing of rock, too

THE permanence of this building's roof is definitely assured because, like the walls, the roofing is also of stone.

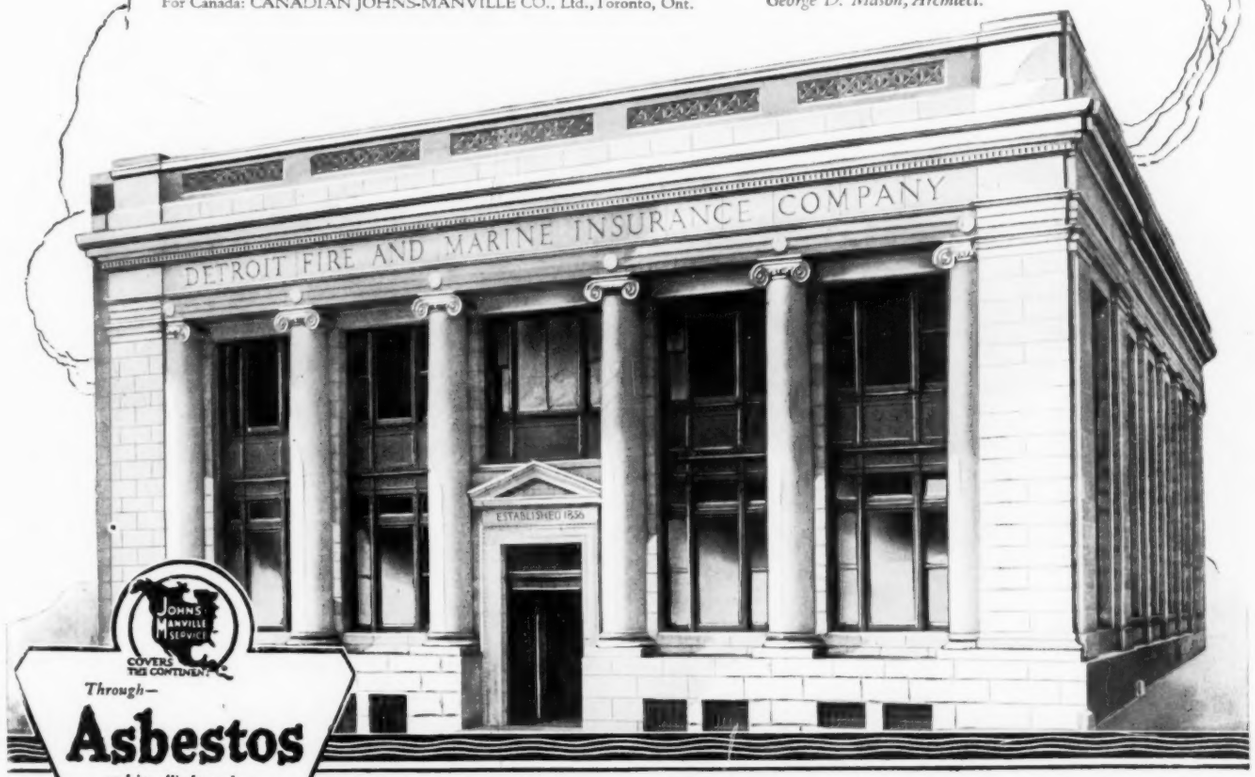
Layer upon layer, sheets of felted asbestos rock fibres impregnated with mineral asphalt were built up into a roofing of stone that will endure through years and years of exposure to any weather.

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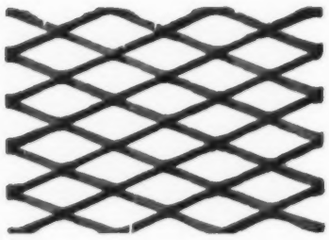
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JOHNS-MANVILLE
ASBESTOS ROOFING

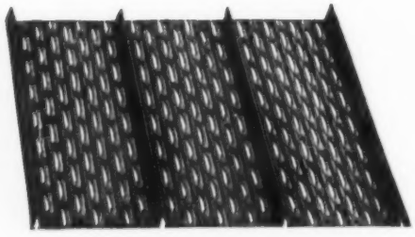
Bostwick

Means more than "TRUSS-LOOP"

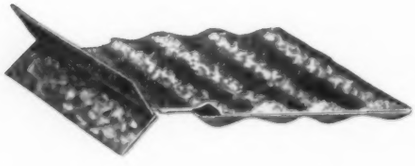












It means a complete line of Wall Specialties from foundation up to eaves

The name BOSTWICK signifies the utmost in building material—the trade's *standard*, no less. And that applies to the complete Bostwick line.

Owing to the fact that it was the first metal lath ("born" in 1891) and to the "wholly different" features of "TRUSS-LOOP"—its distinctive trussed arches, its remarkable strength and stiffness and its multiple time, labor and material saving qualities—BOSTWICK has become associated in the trade most prominently with "Truss-Loop" Metal Lath. But the other specialties in the Bostwick line are equally as good—

Bostwick Expanded Metal Lath
Bostwick "Truss-V-Rib"
Bostwick Corner Bead
Bostwick Base Bead
Bostwick Wall Plugs
Bostwick Wall Ties
Bostwick Channel Iron
Bostwick Heavy Expanded Metal
Bostwick Light Concrete Re-enforcements.

Our new Catalog, just out, gives full details and specifications about the above specialties as well as Bostwick "TRUSS-LOOP" itself.

Service? The usual Bostwick 24-hour shipment now prevails.

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When You Plan a Garage

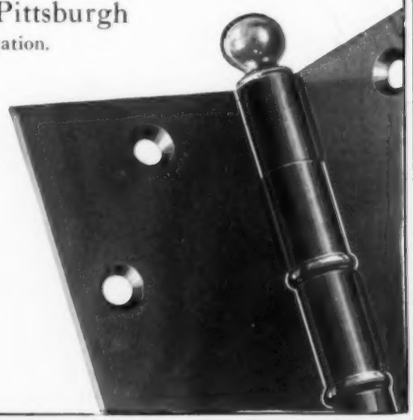
THE greatest advantage of McKinney Complete Garage Sets to Architects and Builders is that they promote rather than limit a wide range of design. When you plan a garage with these sets in mind, you know your plan will be followed down to the last line and your client satisfied.

These sets contain all the hardware necessary for garage doors—even the track. With drawings and directions, they are packed complete in a box—no odds and ends to buy afterward. The doors may be the swinging, sliding-folding, or if space is particularly limited, "around-the-corner" type. There is a set for any size or any style doors you wish used.

McKinney Complete Garage Sets have been given the same careful attention that is responsible for the worth and work of McKinney Hinges and Butts. Fifty years of association with the development of builders' hardware serves advantageously in meeting the needs of the Architect and Builder.

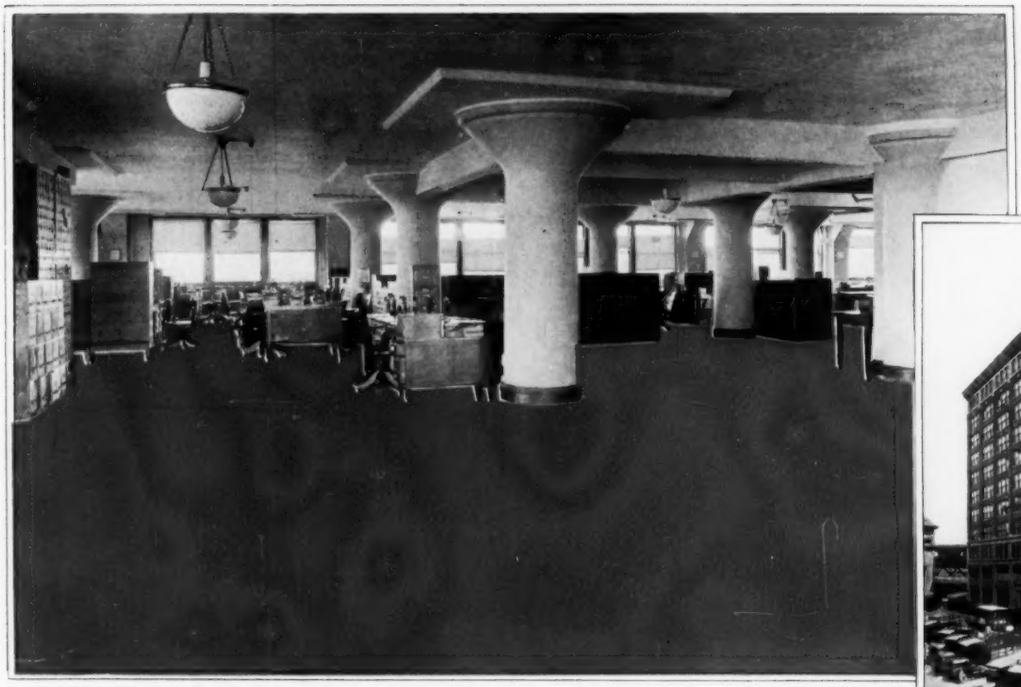
McKinney hung garage doors are pictured and explained in book form. This book shows how easily the sets are installed and how they make better looking, stronger and more protective doors possible. It points a way toward lower building costs and illustrates the possibility for varied designs. This book and the McKinney Catalog will be forwarded upon request.

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McKINNEY
Hinges and Butts

Also manufacturers of McKinney garage and farm building door hardware, furniture hardware and McKinney One-Man Trucks



Brewer Building, Boston, Mass. Architects: Densmore & Le Clair, Boston. Contractors: George A. Fuller Co., Boston. Linoleum laid by C. C. Bailey Co., Boston.



Better Office Floors—

Ten stories of light, airy offices in the Brewer Building, Boston. And 10,000 yards of the floor in this thoroughly up-to-date building are covered with *Gold-Seal* Battleship Linoleum.

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A rich brown or green expanse of floor, warm in winter, cool in summer, quiet at all times. Springy resilience and comfort underfoot. The nightly task of cleaning is easy—in the morning a spotless floor, business-like, beyond reproach. No dust germs on the surface and none in the air. Everywhere a healthful cleanliness because *the floor is sanitary*.

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Gold-Seal Cork Carpet gives cushioned quiet and luxurious tone to the floors it covers. Different shades of rich brown, green and terra cotta (six in all) offer greater latitude in furnishing those rooms where a particular color-scheme and an absolutely silent floor are desired. Durability and your satisfaction are assured by the iron-clad Gold-Seal Guarantee.

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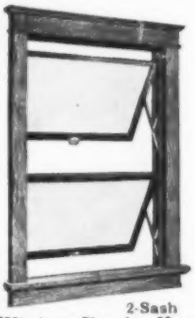
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Battleship Linoleum

(THE FAMOUS FARR & BAILEY BRAND)

Made According to U.S. Navy Standard

On every roll of Gold-Seal Battleship Linoleum will be found our Gold Seal bearing this definite pledge — "Satisfaction guaranteed or your money back."





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SIMPLEX

WEIGHTLESS REVERSIBLE WINDOW FIXTURES

MADE OF SOLID BRONZE



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For Office Buildings, Apartments, Hotels, Hospitals, Schools and Homes



Fixtures Attached to Side Jamb without Sash Showing Track and Operating Arms

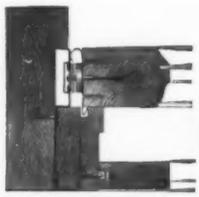
Operate Entirely Outward from Central Position in Frame—1 to 100 per cent Ventilation,—No Direct Draft—Perfect Weathering, Rugged Strength — Save 50 per cent on Up-Keep as Both Sides of Sash can be Cleaned from Within—Conveniently Screened—Do not Interfere with Shades or Curtains.



1 to 100 per cent Ventilation Under Control



Same as above with Sash and Stop in Place



Sectional View at Side Jamb showing Track & Weathering

FULL DETAILS UPON REQUEST

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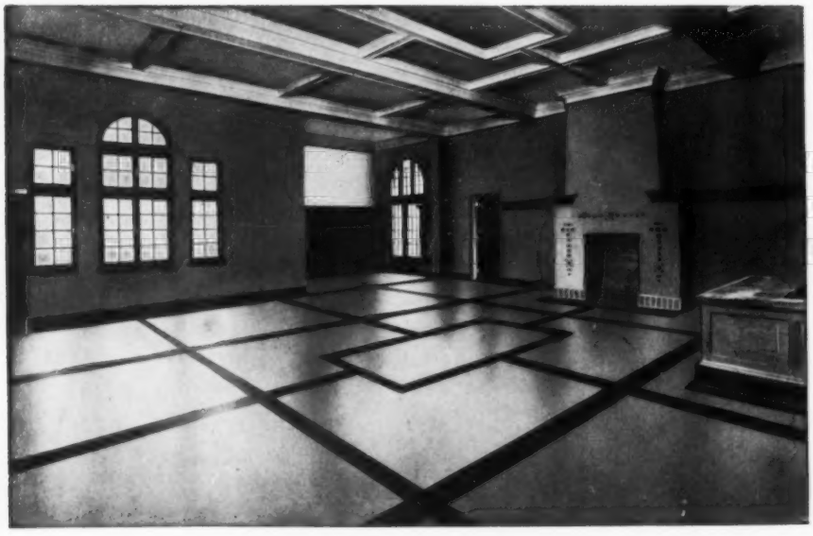
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Sash Reversed for Washing from Within



Roller Shade on Sash Serves as Awning



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Hygienic, Durable, Fireproof

Floors are the most used and most abused portions of every building and demand that only the best flooring material be specified.

ASBESTONE Composition Flooring is an ideal flooring for all interior purposes. It is recognized to be the most perfect Hygienic, Fireproof, Durable flooring that is installed plastic, presents a monolithic surface, smooth, jointless and artistic, is easy to keep clean, noiseless, resilient and easy to the tread.

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ASBESTONE can be installed over either new or old cement or wood, and can be supplied in a variety of artistic colors.

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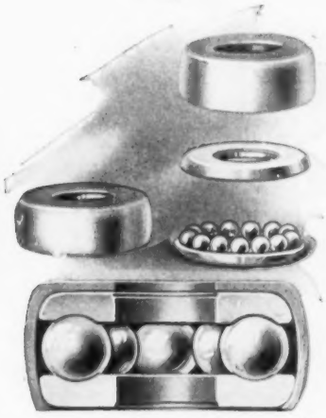
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STANLEY BALL BEARING BUTTS

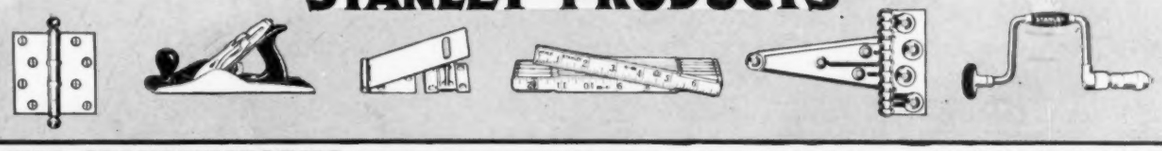
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You are undoubtedly familiar with Stanley Ball Bearing Butts—their permanent strength and ease of operation. You have probably recommended Stanley Butts on the buildings you have planned.

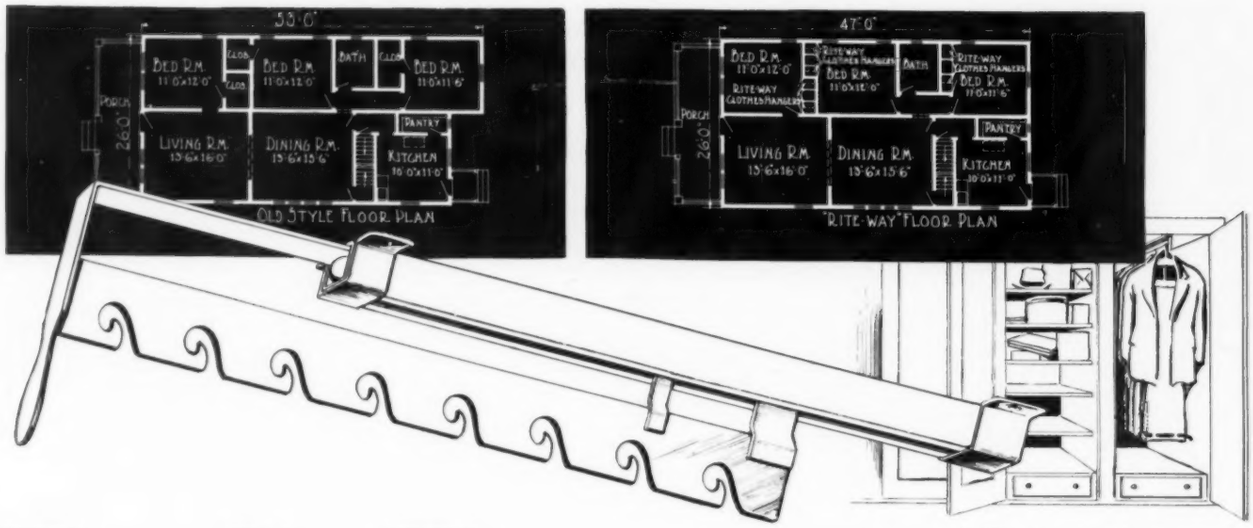
Are the other Stanley products equally well known to you? Stanley Garage Hardware, Screen Door Hardware, Storm Sash Hardware and Rolling Door Hardware are Wrought Steel productions of the highest type—worthy of your strongest recommendation.

May we send you the various catalogs?
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THE STANLEY WORKS NEW BRITAIN, CONN., *Branch Offices* *New York - San Francisco Chicago - Los Angeles - Seattle*



Rite-Way three door closet
Hangers on either side—Shelves in center
2' Wood doors—center one a mirror

The Rite-Way Saved $168.00 In Building This House

INSTEAD of the old-fashioned deep closets, dark and inaccessible, the plans were changed to the modern space-saving arrangement made possible by the use of Rite-Way Garment Fixtures. With no change whatever in the size of the rooms, the length of the house was ***cut down 6 feet.*** The saving in material and labor on this small bungalow amounted to $168.00. On a large apartment or hotel it would run into the thousands.

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on your next building. Let us send you the detailed figures on this bungalow and show you how. Bungalow or skyscraper, the larger the building, the greater the saving.

At the same time that you make this saving, both of space and money, you provide **more room** for clothes. They are kept in perfect condition and a touch brings the whole wardrobe out into light and air. No dark places for moths to gather. The carrier works on noiseless fiber rollers that will not rust or stick.

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We have taken over from the Barney Moore Co. the manufacture and sale of Rite-Way Garment Fixtures. They will continue to be made with the same excellence of design and construction that you now know ***you can depend upon in Lawson Spring Hinges.***

Use the Rite-Way on your next job. It is an easy way to please your clients, and once you have used it you will never go back to the old style closets.

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Ask us to send you the plan and detailed figures on this bungalow. Let us show you how you can take advantage of this new idea in closet construction. This is something worth while looking into. Write today to

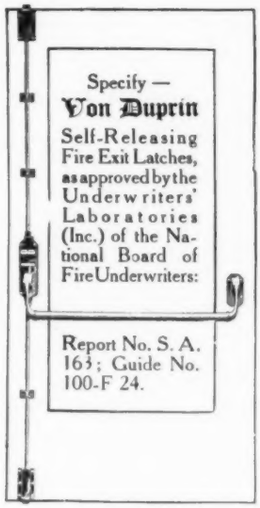
Lawson Manufacturing Co.

230 W. Superior Street Dept. A775 Chicago, Ill.

LAWSON RITE-WAY GARMENT FIXTURE

Von Duprin

Self-Releasing Fire Exit Latches



For Greater Safety

Whenever human beings are grouped together in one building, whether it be a schoolhouse, a theater, a factory or a skating rink, there is always the possibility of panic.

The mob spirit of fear comes without warning, and often when you least expect it. A smell of smoke, the jangle of a fire engine bell, a cry of "FIRE," caused perhaps only by an overtaxed nervous system—a touch of hysteria—and your crowd breaks for the exits.

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Let us send you Catalog 12-F, or see "Sweet's," pages 1056–1061.

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you know that the prime purpose of the stores which you plan is to act as an outlet for salable goods. Much depends on the store front as to whether or not that outlet is adequate.

The S. S. Kresge Company has solved their window display problems by the installation of only

ZOURI **SAFETY METAL STORE FRONTS**

Approved by Underwriters' Laboratories

Zouri safety key-set construction insures against plate glass breakage, due to faulty setting. It is the only construction approved by the Underwriters' Laboratories. If you are not already acquainted with Zouri installation, let us tell you about it.

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But, we believe you should know what we are telling your clients about Redwood, in the Literary Digest House Beautiful and House & Garden—

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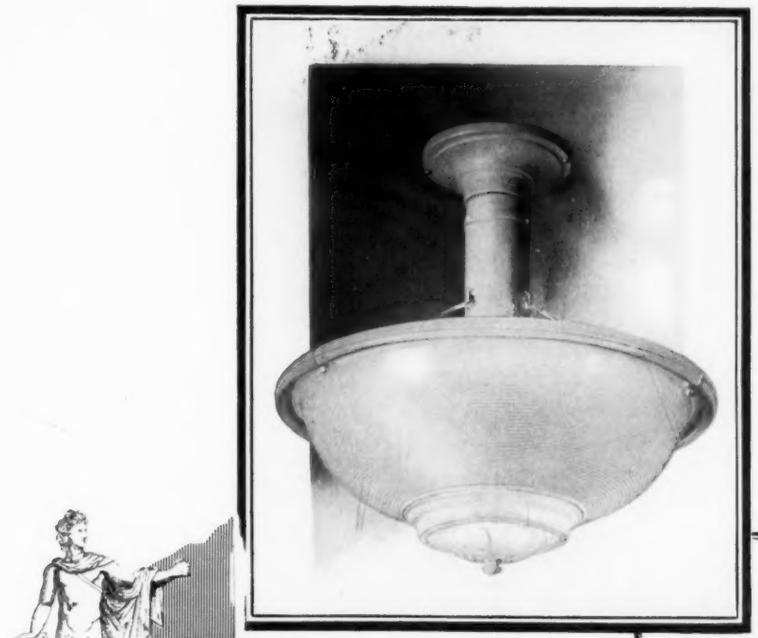
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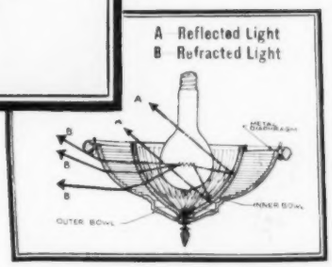
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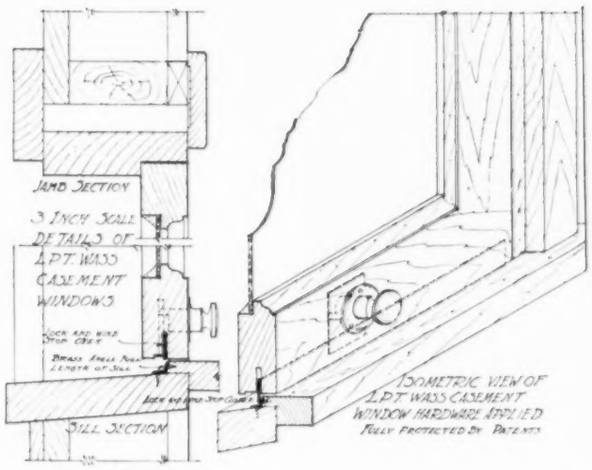
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GLARE IS THE CAUSE OF EYE STRAIN

FIG. 1

GLARE IS THE CAUSE OF EYE STRAIN

FIG. 2

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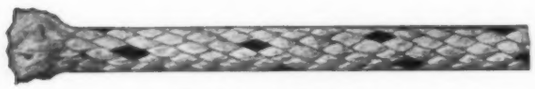
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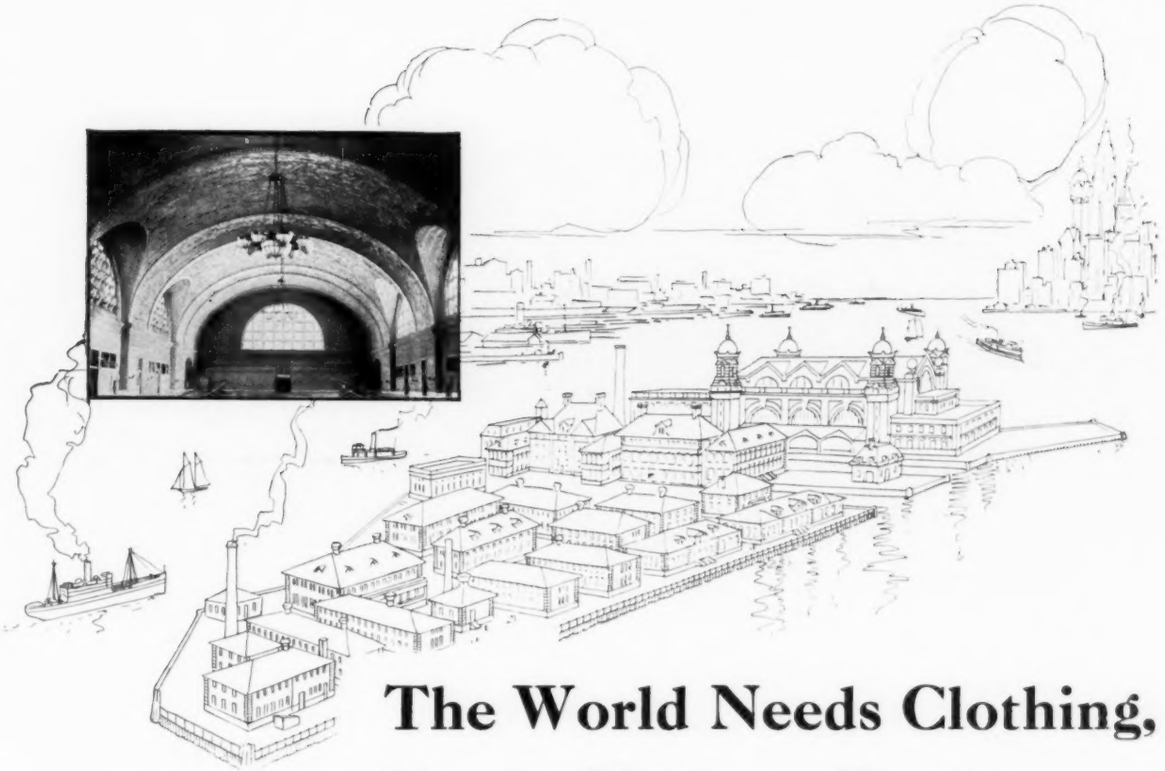
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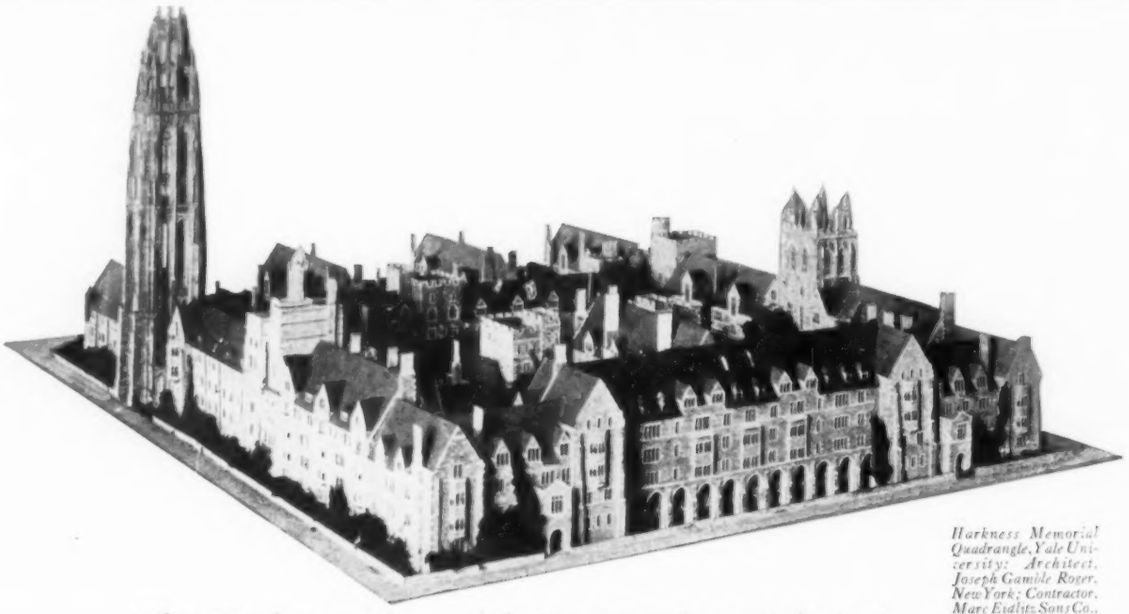
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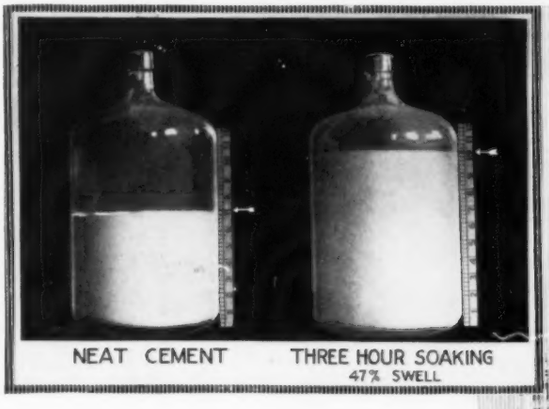
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The Architectural Forum Service Section

THIS section contains each month information of direct service value to architects in connection with the design, equipment and construction of buildings. A special feature is the Consultation Committee of THE ARCHITECTURAL FORUM, composed of men nationally known as experts in their respective fields. Through this Committee general questions on the subjects indicated will be answered. Extensive information is given on building material retail prices and the general trend of markets. In the February, May, August and November issues a classified tabulation of cubic costs in various types of buildings based on country-wide data will be presented.

Trend of Construction Activity

CONSTRUCTION activity in May, according to figures published by the F. W. Dodge Company, was 9½% greater than in April. Contracts awarded in the 27 Northeastern states of the country during May amounted to $242,093,000, compared with $220,886,000 in April.

The increase in activity would have been greater except for widespread labor troubles. In New England and throughout the Middle West, where wage disputes have been general, building activity kept up during May at about the same rate as in April. Substantial increases in activity were reported in the territory along the Atlantic coast from New York to South Carolina.

Residential building continues to lead all other classes. In May contracts for this class of construction amounted to $82,982,000, or 34% of the total. Public works and utilities amounted to $64,999,000, or 27% of the total; business buildings, $29,494,000, or 12% of the total; educational buildings, $24,462,000, or 10% of the total; industrial buildings, $20,404,000, or 8% of the total.

The demand for new construction still continues strong. Contemplated new work was reported in May to the amount of $462,785,000, which is 18% greater than the amount reported in April.

Building conditions throughout the country are also reflected in replies received by the Southern Pine Association to a questionnaire sent to 150 building material dealers in the largest cities and most thickly populated communities of the country.

A preliminary summary of the first 80 replies, made public on June 1, shows that materially less business building construction is going on now than at the same time last year. The conditions with respect to residence construction are better; 35 cities report less building of homes than last year; 23 report as much, and 22 show greater activity. The preponderance of residence construction is in dwellings of the smaller type.

There is an ample supply of building trades labor. Only 2 cities out of 80 report a shortage; 67 have sufficient labor to carry out their building programs, and 11 report unemployment in this class of labor.

There have been reductions in wages in only about half of the cities heard from. The average

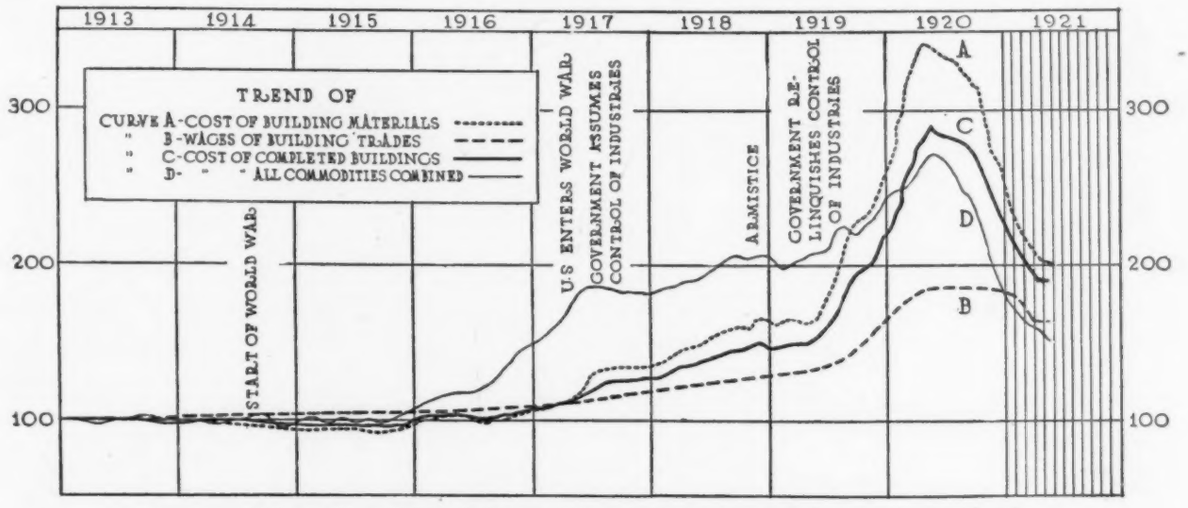


Chart prepared by Monks & Johnson, Architects and Engineers, showing trend of construction costs based on wage and material costs published by U. S. Department of Labor and applied to cost of finished buildings in proportion of 40% for labor and 60% for materials

reduction in wages of carpenters and bricklayers in those cities which have reported decreases is from 15 to 20%. Wages of common labor have been reduced more, 26 cities reporting reductions ranging from 25 to 55%. Nearly all report a marked increase in efficiency.

Light is thus thrown on the subject of reductions in the retail prices of staple building materials, as compared with a year ago:

43 cities report average reduction on all items of	35%
37 cities report average reduction on lumber of	47%
12 cities report average reduction on brick of	29%
19 cities report average reduction on all items, excluding lumber, of	19%

In reply to the question as to whether there is money available for building when people feel that conditions are favorable, 20 cities reported sufficient funds, while 46 report a shortage of money for building purposes and 4 report a limited supply. In most communities money will be loaned to home-builders upon only 50% of the value of the buildings.

On the preceding page we illustrate a chart prepared by Monks & Johnson, Engineers and Architects, which indicates the price trend in materials and labor. It is interesting to note that the sharp drop in all the curves from the peak has eased off to a comparatively level line within the past month. It may be explained that the curves representing labor wages in the building trades and material costs are plotted from the figures supplied by the Bureau of Statistics of the U. S. Department of Labor. From other data the proportion of labor in the building trades in the cost of a finished building is assumed to be 40%, and the proportion of material 60%. The curve representing the cost of finished buildings is plotted from the curves of wages and materials in this ratio.

Interesting Recommendation Regarding Quantity Surveys

FINDINGS OF THE ASSOCIATED GENERAL CONTRACTORS' CONVENTION AT NEW ORLEANS

FOR a number of months a joint committee, consisting of members of The American Institute of Architects, The Associated General Contractors of America, and The Engineering Council, has been giving careful consideration to the question of quantity surveys and estimating costs. The final report of this committee has not as yet been made available, but a recent draft of the findings as given out at the New Orleans convention of The Associated General Contractors offers a number of interesting recommendations.

The question of quantity surveys has received extensive consideration in this country for many years. It is quite evident that the duplication of effort resulting from the present method of estimating costs, as carried out by contractors and sub-contractors, represents a direct tax on the owner. Naturally a contractor includes in his overhead expenses an estimating charge which covers not only any particular job in question, but a general charge for estimating on all jobs whether he is the successful bidder or not; this at present constitutes a definite part of his overhead expense. It is evident that the provision of a quantity survey in connection with the plans of a building project should result in a definite reduction of the cost, not only because of direct saving of time spent by the contractor and sub-contractors in estimating, but because the basis of bidding is made more specific and the element of error in estimating is eliminated from the contractor's viewpoint. If the owner pays for making up a list of all quantities entering into the proposed construction, the reduction in cost should be several times the amount which he may expend for this purpose, as all bidders may enjoy the benefit of saving the necessary expense of taking off quantities from drawings and specifications. This system is not without precedent, as it is customary in England where it has proved very successful.

We give an outline of tentative recommendations made in the latest draft of this joint report:

1. QUANTITY SURVEYING—Architects, engineers and contractors should jointly use their efforts to have established facilities for making quantity surveys in their communities.
2. COST OF SURVEY—From one-fourth of 1 per cent to 1 per cent of the cost of the project for commercial and public work, and not more than twice as much for residence work, should be the cost of the survey.
3. BASIS OF CONTRACTS—Owners have the option of: (a) Making the quantity survey a part of the contracts. (b) Giving the successful bidder, at his own expense, an opportunity to verify the accuracy and completeness of the quantity survey before the contract is signed. If he proves an error to exist in the survey, the bidder shall be permitted to adjust his bid accordingly.
4. UNIT QUANTITIES AND STANDARDS—The schedule of unit quantities should conform to local customs or methods of measurement and should be so stated on the survey. The eventual adoption of national standards is recommended.
5. GUARANTEE—The guarantee of quantities by the quantity surveyor is not recommended, for it might influence the surveyor to protect himself by increasing the quan-

tities. The extra cost of the guarantee would not be warranted.

6. THE COST OF PREPARING SURVEY—The cost of preparing the quantity survey should be borne by the owner, whether the building is constructed or not.
7. EXISTING SYSTEMS—Existing systems which do not eliminate duplication of estimating effort, or which do not produce the most economical results to the owner, are not endorsed, but it is realized that existing systems will continue in operation until quantity survey bureaus are established so as to be available in each community.
8. PAYMENTS—Payments should be made by the owner to each bidding contractor, based on an individual certificate issued by the architect or engineer. The amount of the payment should be:
   (a) Where a quantity survey is furnished: No payment.
   (b) Where a quantity survey is not furnished:

   Under the system of duplication of the determination of quantities now in vogue each contractor is put to large expense for such estimating of quantities. Therefore, when plans and specifications are not accompanied by a quantity survey furnished by the owner, he should agree to pay to each contractor submitting a bid on his project, for the preparation of an estimate or survey of quantity, one-half of 1 per cent of the cost of the project on all commercial or public work and 1 per cent on all residence work, regardless of whether the contract is let or not.
9. COST OF PROJECT—The cost of the project is defined as the accepted bid or, in cases where no bid is accepted, the bid of the lowest responsible bidder as determined by the architect or engineer.
10. ALTERNATE BIDS—Alternate bids, when requested by the designer, should be paid for by taking the sum of the cost of one bid plus the cost of such alternate bids involving refiguring of quantities.
11. ALTERED PLANS—Altered plans which involve a change in quantities justify an addition to the original payment for estimating, on the same basis as the first estimating fee.
12. SUB-CONTRACTS—In sub-contracts where the quantity survey does not cover the sub-contractor's work, general contractors should:
    (a) Provide such quantity survey, or
    (b) Arrange for payment for estimating to sub-contractors, making due allowance for the contingency that the same sub-bid may be submitted to several general contractors.

All signs point to the fact that the time is coming when the preparation of working drawings and specifications will include also the provision of a quantity survey carried out through some organization developed for this purpose, or in some manner directly by the architect's own organization. It may readily be seen, therefore, that this is a subject which should receive careful consideration on the part of every architect who is interested in anticipating important changes in the type of service rendered to his clients.

The Forum Consultation Committee

A DIRECT SERVICE FOR ARCHITECTS, CONTRACTORS AND BUILDING OWNERS

TO aid us in giving information to our subscribers we are fortunate to have the co-operation of a number of well recognized experts who form a Consultation Committee of THE ARCHITECTURAL FORUM. This service is established without charge for subscribers who seek information on specific questions in these various fields. Inquiries should be addressed to the individual Committee member in care of THE ARCHITECTURAL FORUM, 103 Park avenue, New York.

The use of this service is open without charge to subscribers who may wish information of a general nature covering problems arising out of their work.

The basis on which this Committee has been organized is as follows:

(*a*) That each Committee member shall be a representative leader in his line;
(*b*) That no Committee member has affiliations with any manufacturer;
(*c*) That no Committee member will be called upon for detailed service except by special arrangement;
(*d*) That a special editorial article on a subject represented under each of the headings below shall be prepared during the year by the Committee member.

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Legal Questions

WILLIAM L. BOWMAN, attorney, member of the New York Bar, Specialist in legal matters pertaining to real estate and building contracts.

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FREDERIC CULVER, President, Culver & Co., specialists in the financing and development of co-operative house projects. Mr. Culver has successfully developed approximately 25 million dollars' worth of co-operative apartment houses. He is an attorney and has had long experience in financing and construction of this nature.

Fire Protection Engineering

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Hotel Design and Equipment

DANIEL P. RITCHEY, known in the hotel field as the "hotel doctor." Mr. Ritchey, who is an engineer as well as an experienced hotel owner and manager, is qualified to answer any questions which may arise.

Automotive Buildings

HAROLD F. BLANCHARD, for years a specialist in the layout and equipment of buildings of this type. Mr. Blanchard is a mechanical engineer and has practical knowledge of special conditions in many sections of the country through personal investigation.

Building Management

J. CLYDESDALE CUSHMAN, President, Cushman & Wakefield, Inc., Real Estate, New York, and Secretary, Building Managers and Owners' Association of New York. Mr. Cushman's firm has participated largely in the promotion and operation of many large New York buildings. His specialty is the management of buildings.

Real Estate

C. STANLEY TAYLOR, widely experienced in real estate development and financing, real property law, architecture, engineering and building construction. Financial and Business Editor of THE ARCHITECTURAL FORUM and THE BUILDERS' JOURNAL.

Farm Science

FREDERICK WALTER IVES, B.S., M.E., President, The Agricultural Engineering Company, Columbus, Ohio. Professor and Head of Department of Agricultural Engineering, Ohio State University. Specialist in land drainage, soil improvement, surveys, farm arrangement for economical production, purchase of equipment and economic layout of farm buildings with special reference to interior arrangement.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

BUILDING SUPPLIES LISTED.
All prices are retail,
delivered-on-the-job, unless otherwise noted.

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A star (★) after city name, denotes no revisions received.

		NEW ENGLAND					NEW YORK					
		Portland, Me.‡	Boston, Mass.	Providence, R. I. *	Hartford, Conn.	New Haven	New York City	Albany, N. Y.†††	Utica††	Syracuse	Oswego	Binghamton
(1)	Bulk Lime, per cwt.	....	....	....	....	....	....	....	....	....	$1.25	....
(2)	Barreled Lime, 180 lbs. (net) bbls., per bbl.	$3.05	$3.25	$3.25	$4.35	....	....	....	$3.70	$3.30	3.90	$3.75
(3)	Barreled Lime, 280 lbs. (net) bbls., per bbl.	....	4.50	4.50*	4.35*	$4.75	$4.70*	$5.40*	5.25	4.75	4.75	4.75
(4)	Crushed Stone, per ton	....	3.00	....	4.35	....	....	3.00	3.75	2.20	3.20	....
(5)	Crushed Stone, per yd.	....	....	3.75	3.50	....	4.00*	....	....	2.64	5.25	....
(6)	Common Brick, standard quality and sizes (8x2¼x3¼), per M.	32.00	20.00	28.00	24.00*	25.00	15.00*	24.00	24.75	20.00	30.00	22.00
(7)	Corner Bead, galvanized, per ft.	.045	.05	.05	.045	.05	....	.06	.05	.05	.05	.05
(8)	Drain Tile, 4 in., per ft.	.12	.153	.16	.08	.10	....	.09	.0745	.07	.06	.06
(9)	Drain Tile, 6 in., per ft.	....	.199	.30	.14	.15	....	.11	.12925	.135	.07	.105
(10)	Flue Lining, 8½ in. x 8½ in., per ft.	.30*	35%*	.45	.39	.42	....	32%*	.375	.33	.35	.36
(11)	Flue Lining, 8½ in. x 13 in., per ft.	.45*	35%*	.675	.58	.63	....	32%*	.575	.495	.55	.54
(12)	Fire Brick, Standard 9 in. No. 1 Clay, per M.	50.00	75.00	90 00	70.00	70.00	75.00	87.50	80.00	73.00	80.00	75.00
(13)	Fire Clay, in 100-lb. cloth bags, inc. bags, per ton	135.00	25.00*	30.00*	25.00	21.43	15.00*	25.00	14.50	18.00	25.00	20.00
(14)	Gravel, washed, per yd.	2.00*	2.75*	2.00	2.50*	....	4.25*	2.50	....	....	....	....
(15)	Hollow Building Tile (8x12x12 in.), per M.	....	....	....	....	....	....	....	....	250.00	300.00	....
(16)	Hollow Building Tile (8x5x12 in.), per M.	....	68.50	....	....	....	....	200.00	....	135.00	....	....
(17)	Hydrated Lime (mason's) in 50 lb. paper bags, per bag	.60	.55	.80	.575	.60	.55*	.625	....	.70	.65	.65
(18)	Hydrated Lime (finishing) in 50 lb. paper bags, per bag	....	.60	.85	.625	.65	.55*	.65	.694	.70	.75*	.70
(19)	Hair, per bu.	.45	.45	.60	.80*	.60	.675*	.75	....	....	.75	....
(20)	Metal Lath, Exp., Gauge No. 24, weight 3.4 lbs.‡, per yd.	.35	.322	.38	.35	.39	.3115	.48	.36	.40	.45	....
(21)	Metal Lath, Expanded, Gauge No. 25, weight 3 lbs., per yd.	.35	.32	.37	.34	.38	.285*	.46	....	.34	....	....
(22)	Mortar Color, red, per lb.	.05	.03	.03	.025	.03	.03	.045	.025	.05	.05	.03
(23)	Mortar Color, buff, per lb.	.10	.15	.04	.08	.04	.04	.07	.0325	.05	....	.05
(24)	Mortar Color, double strength, black, per lb.	....	.30	.07	.35	.30	....	.07	.0575	.10	.10	.15
(25)	Partition Tile, Clay (3x12x12 in.), per M.	....	160.00	200.00	170.00	180.00	136.40*	160.00	....	170.00	180.00	....
(26)	Partition Tile, Clay (4x12x12 in.), per M.	....	180.00	220.00	180.00	200.00	153.50*	170.00	155.25	180.00	200.00	160.00
(27)	Partition Tile, Gypsum (3x12x30 in.), per ft.	....	.20	.20	.18	.23	....	.18	....	.16	....	.18
(28)	Partition Tile, Gypsum (4x12x30 in.), per ft.	....	.22	.24	.31	.25	....	.20	....	.18	....	.20
(29)	Portland Cement, 4 sacks to bbl., (excluding sks.), per bbl.	3.70	3.50	3.70	3.48*	3.70	2.80*	4.30	3.50	3.50	3.35	3.50
(30)	Extra charge for each cloth sk., per sk.	.10	.10	.25	.08	.075	.25	.10	.075	.075	.10	.10
(31)	Paving Block, vitrified (3½x4x8½ in.), per M.	50.00	75.00	....	....	....	....	....	....	65.00	75.00	....
(32)	Plaster Board, ⅜ in. thick, per M. sq. ft.	40.00	34.00	40.00	30.00*	41.25	.28*	42.50	41.00	40.00	40.00	40.00
(33)	Sand (Building), per ton	....	3.00	....	....	....	....	2.00	2.50	....	....	4.00
(34)	Sand (Building), per yd.	....	....	2.00	1.75	....	2.00	2.50	....	....	4.00	....
(35)	Sewer Pipe, single strength, off list, per cent.	25%	35%	30%	30%	30%	20%	32%	43%	45%	40%	40%
(36)	Wall Coping, 9 in., per ft.	.20	30%*	.32	30%*	.28	.32	32%*	.36	.22	.30	.24
(37)	Wall Coping, 13 in., per ft.	.30	30%*	.48	30%*	.42	.48	32%*	.54	.33	.40	.36
(38)	Wall Plaster, neat, in paper, in 80 lb. bags, per ton	....	....	....	25.00	....	....	....	....	18.75	....	20.00
(39)	Wall Plaster, neat, in cloth, 100 lb. sks, incl. sks., per ton	24.00	24.00*	24.00*	24.00*	28.00	23.00*	26.00*	22.00*	20.50*	22.50	23.00*
(40)	Wall Plaster, sanded, in cloth, 100 lb., incl. sks., per ton	....	21.00*	21.00*	20.50*	23.00*	18.00*	20.50*	15.00	14.20*	22.50	20.00
(41)	Wall Plaster, wood fibre, in cloth, 100 lb., incl. sks., per ton	24.00	24.00*	24.00*	24.00*	28.00	26.00*	26.00*	22.00	20.50*	25.00*	20.00
(42)	Wall Ties, galvanized, per M.	....	12.60	....	7.50	6.00	5.00	6.00	5.00	5.00	6.00	5.00
(43)	Wall Plugs, per M.	....	35.00	35.00	....	30.00	30.00*	30.00	36.00	25.00	28.00	....
(44)	Asphalt Shingle (*singles; †stripped), per sq.	7.75	7.50*	9.50*	7.50*	....	8.50*	....	7.50†	7.00*	8.00*	7.50
(45)	Roofing Slate Surf. (*heavy, †extra heavy), persq.	2.10**	3.00*	....	3.50	....	....	4.35†	2.85†	3.00**	3.50†	4.00*
(46)	Roofing Smooth Surf. (*light, †medium, §heavy), per sq.	2.85§*	2.30§*	3.50§	4.25§*	....	....	2.88§*	2.85§*	....	2.25§	4.25§
(47)	Stucco Board, Medium wt., per M. sq. ft.	....	50.00	....	65.00*	....	70.00	....	60.00*	55.00	....	....
(48)	Stucco Board, Narrow Key, per M. sq. ft.	....	65.00	....	70.00*	....	....	....	....	60.00	....	....
	LUMBER ITEMS			*								
(49)	Wood Lath, No. 1 (size 4 ft.), per M.	....	9.00	9.50	11.00*	9.00	12.00*	11.00	12.00	....	....	12.00
(50)	No. 1 Yellow Pine Dimension 12 to 16 ft., per M. Board ft.	....	....	70.00	85.00	....	....	....	48.00	....	41.00	50.00
(51)	1x10 No. 1 Shiplap, Y. P., all lengths, per M. Board ft.	....	....	48.00	....	....	....	45.00	45.00*	....	62.00	....
(52)	1x10 No. 2 Shiplap, Y. P., all lengths, per M. Board ft.	....	....	40.00	....	....	....	38.00	40.00*	....	41.00	....
(53)	1x4 No. 2 Sheathing, per M. Board ft.	....	....	45.00	....	....	....	....	40.00	....	40.00	....
(54)	1x4 "B" Flooring, per M. Board ft.	....	....	70.00	60.00*	....	....	75.00	85.00*	....	70.00	....
(55)	Yellow Pine Clear Finish, per M. Board ft.	....	....	90.00	90.00	....	....	85 00	90.00	....	90.00	....
(56)	1x6 "B&Btr" Drop Siding, per M. Board ft.	....	....	65.00	65.00*	....	....	68.00	....	....	90.00	....
(57)	1x6 No. 1 Common Drop Siding, per M. Board ft.	....	....	60.00	....	....	....	....	....	....	60.00	....
(58)	Cypress Finish Lumber, per M. Board ft.	....	....	150.00	125.00	....	....	160.00	160.00	....	160.00	....
(59)	¾x4 "B" Partition, per M. Board ft.	....	....	75.00	70.00	....	....	75.00	85.00	....	90.00	85.00
(60)	½x4 "B" Ceiling, per M. Board ft.	....	....	60.00	50.00	....	60.00	60.00	65.00	....	65.00	60.00
(61)	½x5 Clear Rdwd. Bevel Siding, per M. Board ft.	....	....	65.00	60.00*	....	75.00	60.00	65.00*	....	65.00	....
(62)	Mouldings, Yellow Pine, over list	....	....	....	50%	....	....	....	....	....	.015*	....
(63)	Washington 16 in., 5/2 Clears, per M.	....	....	6.50	....	....	....	5.50	7.75	....	6.50	6.75
(64)	Washington 16 in., 5/2 Clears, per sq.	....	....	6.00	....	....	....	....	6.50	....	5.75	....
(65)	Canadian 16 in., 5/2 xxxxx Clears, per M.	....	....	7.00	7.00	....	....	....	....	....	7.20	7.75
(66)	Canadian 16 in., 5/2 xxxxx Clears, per sq.	....	....	6.50	....	....	....	....	....	....	6.25	....
(67)	1x6 in.-8 in.-10 in.-12 in. No. 1 Com. Yellow PineBoards, per M.	....	....	48.00	38.00*	....	....	45.00	48.00*	....	60.00	63.00*

*(Above Item 49)—No lumber revisions received for this issue from this city.

(‡) **Means no cloth bags used.**

§Portland, consumer prices; contractor quotations on application.

†††Albany allows 10% and 2% off to contractors before 10th of month following delivery.

Lime, Barreled (Item No. 3), 280 lbs.—Providence, Hartford, Albany, common; 300 lb. barrel, New York City; **Hydrated** (Items 17, 18)—New York, in ton lots; Oswego, per bu. of 70 lbs.

Crushed Stone (5)—New York, per 2600 lb. yd.

Common Brick (6)—Hartford, at Brickyard; New York, $14-$15, f. o. b. dock, plus cartage and 10%.

Flue Lining (Item 10, 11)—Boston, Albany, off list. Portland, 25%—10% cash.

Fire Clay (Item 13)—New York City, 100 lb. bag rate; no credit for returned cloth sacks, Boston, New York, Providence.

Gravel (14)—New York, 2600 lb. yd. Portland, F. O. B. cars; Bostan, Hartford, per ton.

Hair (19)—New York, per lb.; Hartford, 4 lbs. per bu.

Metal Lath (Item 21)—New York City, Gauge 26.

Par. Tile (25, 26)—New York, less than 2,000 ft.

P. Cement (Item 29)—New York, at yard. Hartford, less 8c rebate.

Plaster Board (Item 32)—New York City, price for each, size 32x36x⅜ in.; Hartford, 32x36x⅜.

Wall Coping (36, 37)—Hartford, Boston, Albany, per cent. off.

Wall Plaster (38, 39, 40, 41)—Returned bags, Syracuse, Utica, Providence, New Haven, 15c; Albany, Oswego, 10c each; Boston, 12c each; Hartford, 13c rebate for bags; New York City, 25c. Sacks extra, Binghamton.

Wall Plugs (Item 43)—New York, chiefly hardware dealers.

Roofing, Slate Surf. (Item 45)—70 lbs., Syracuse; Portland, 3 ply.

Roofing, Smooth Surf. (Item 46)—55 lbs., Boston, Hartford, Albany; 63 lbs., Utica; Portland, Utica, 3 ply.

Stucco Board (Items 47, 48)—Hartford, Utica, creosoted.

(Item 49)—Hartford, spruce; New York City, Eastern spruce.

(Item 51, 52)—Utica, 1x8 in.; **(Item 54)**—Hartford, B Flat: Utica, flat grain; **(Item 56)**—Hartford, fir; **(Item 61)**—Utica, 6 in.; Hartford, 6 in. Red Cedar; **(Item 62)**—Oswego, per inch; **(Item 67)**—Binghamton, Hartford, No. 2 C.; Utica, No. 2 Com.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

BUILDING SUPPLIES LISTED. NEW YORK, PENNSYLVANIA, NEW JERSEY

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		Elmira	Rochester	Buffalo	Jamestown, N.Y.	Allentown, Pa.	Erie	Philadelphia	Reading	Pittsburgh	Scranton	Newark, N.J.	Paterson, ★ N.J.
(1) Bulk Lime	per cwt.	....	....	....	....	$0.90	....	$0.64	$0.75*	....	$0.80	....	....
(2) Barreled Lime, 180 lbs. (net) bbls.	per bbl.	$4.00	$3.50	$3.25*	....	3.00	$3.40	.75*	....	$5.90	3.15	$3.40*	$ 3.60
(3) Barreled Lime, 280 lbs. (net) bbls.	per bbl.	5.25	4.75	5.00	....	4.00	5.10	....	....	5.25	....	5.70*	5.50
(4) Crushed Stone	per ton	....	2.50	....	....	2.30	2.30	4.50	3.00	7.00*	2.75	3.35	3.15
(5) Crushed Stone	per yd.	2.50	2.00	....	....	....	....	....	....	....	....	4.00	3.65
(6) Common Brick, standard quality and sizes (8x2¼x3¼)	per M.	30.00	20.00	25.00*	$35.00	19.50	26.00	20.00*	21.50	20.00	18.75	22.00	20.00
(7) Corner Bead, galvanized	per ft.	.07	.05	.05	....	.06	.04	.04	.05	.07	.06	.05	.09
(8) Drain Tile, 4 in.	per ft.	.055	.075	.055	.085	....	.0525	....	.07	.08	.08	.09	....
(9) Drain Tile, 6 in.	per ft.	....	.125	.12	....	....	.095	....	....	....	.14	.1675	.17
(10) Flue Lining, 8½ in. x 8½ in.	per ft.	.50	.33	.30	.42	.39	33*	.36	.36	.33	.38	.39	.42
(11) Flue Lining 8½ in. x 13 in.	per ft.	.65	.50	.45	.63	.58	.50*	.54	.54	.495	.57	.585	.63
(12) Fire Brick, Standard 9-in. No. 1 clay	per M.	80.00	75.00	75.00	75.00	60.00	75.00	75.00	70.00	80.00	75.00	70.00	85.00
(13) Fire Clay, in 100-lb. cloth bags, including bags	per ton	20.00*	22.00	18.00*	30.00*	18.00‡	16.00	22.00	22.00	20.00*	20.00*	17.00	35.00
(14) Gravel, washed	per yd.	2.00*	2.50	2.90	....	....	3.25	2.80*	4.00*	2.00*	2.00*	4.20	3.50
(15) Hollow Building Tile (8x12x12 in)	per M.	....	270.00		....	....	....	....	....	....	....	....	....
(16) Hollow Building Tile (8x5x12 in.)	per M.	....	100.00	118.00	120.00	111.20	100.00	....	....	120.00	....	120.00	....
(17) Hydrated Lime (masons) in 50-lb. paper bags	per bag	....	.50	.525	.75	.55	.55	.45	.60	.55	.60	.53	.60
(18) Hydrated Lime (finishing) in 50-lb. paper bags	per bag	.75	.525	.575	.75	.68	.575	.6125	.80	.60	.70	.68	.70
(19) Hair	per bu.	.65*	.75*	.48	....	.75*	.10*	.40	.50	.75*	.70*	.70	.50*
(20) Metal Lath, Expanded, Gauge No. 24, wt. 3.4 lbs ‡	per yd.	.45	.41	.36	.39	....	.40	.361	.40	.32	.36	.41	.50
(21) Metal Lath, Expanded, Gauge No. 25, wt. 3 lbs.	per yd.	....	.38	....	....	....	.36	.3415	....	.32	....	.40	.43
(22) Mortar Color, red	per lb.	.06	.06	.03	.05	.038	.03	.035	.05	.0225	.06	.03	.04
(23) Mortar Color, buff	per lb.	.06	.06	.035	....	.047	.035	.035	.04	.0325	.06	.04	.15
(24) Mortar Color, double strength black	per lb.	.10	.06	.06	.06	....	.06	.10	.10	.05	.08	.07	.15
(25) Partition Tile, Clay (3x12x12 in.)	per M.	....	150.00	122.00	....	....	100.00	210.00	....	....	....	145.00	270.00
(26) Partition Tile, Clay (4x12x12 in.)	per M.	150.00	160.00	137.00	....	140.00	115.00	230.00	....	110.00	160.00	160.00	300.00
(27) Partition Tile, Gypsum (3x12x30 in.)	per ft.	....	.0975	.135	.12	.16	....	.16	.18	.15	....	.175	.20
(28) Partition Tile, Gypsum (4x12x30 in.)	per ft.	....	.15	.1625	.16	.17	....	.19	.19	.17	....	.2225	.21
(29) Portland Cement, 4 sacks to bbl. (excluding sks.)	per bbl.	3.60	3.00	3.35	3.30	3.00	3.40	3.30	3.50	3.00	3.40	3.15	4.00
(30) Extra charge for each cloth sk	per sk.	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.25
(31) Paving Block, vitrified (3½x4x8½ in.)	per M.	.....	50.00	*	....	75.00	....	....	55.00	45.00	45.00	51.00	55.00
(32) Plaster Board, ⅜ in. thick	per M. sq. ft.	37.50	41.25	38.75	42.00	38.00	55.00	40.00	45.00	50.00	42.50	37.50	37.50
(33) Sand (Building)	per ton	....	....	....	....	4.00	3.00	....	4.00	2.00*	3.00	2.35	2.60
(34) Sand (Building)	per yd.	3.50*	2.50	2.90*	....	....	3.00	2.55	....	....	....	2.90	2.75
(35) Sewer Pipe, single strength, off list	per cent.	40%	45%	45%	35%	35%	45%	38%	35%	45%	37%	35%	30%
(36) Wall Coping, 9 in.	per ft.	.25	.22	.22	.28	.35	.22	.248	.30	.22	.26	.26	.28
(37) Wall Coping, 13 in.	per ft.	.36	.33	.33	.42	.45	.33	.372	.45	.33	.38	.39	.42
(38) Wall Plaster, neat, in paper, in 80-lb. bags	per ton	22.00	25.00	21.00	22.00	....	....	....	....	24.00	....	....	....
(39) Wall Plaster, neat, in cloth, 100-lb. sacks, including sacks	per ton	25.00	20.00	20.00	22.00*	25.00*	25.00	22.50*	27.00	26.00*	24.00*	22.00	25.00
(40) Wall Plaster, sanded, in cloth, 100-lb., including sacks	per ton	....	21.00	14.00*	21.00*	22.00*	17.00*	17.50*	23.00	22.00*	17.40*	16.80*	20.00
(41) Wall Plaster, wood fibre, in cloth, 100-lb., including sacks	per ton	25.00	20.00	19.00	22.00*	....	25.00*	22.50*	....	26.00	24.00*	....	28.00
(42) Wall Ties, galvanized	per M.	5.00*	5.00	5.00	5.00	3.50*	3.50	6.00	5.00	4.50*	....	5.00	4.00
(43) Wall Plugs	per M.	22.50	25.00	20.00	....	25.00	....	....	....	30.00	....	18.50	26.00
(44) Asphalt Shingle (*singles; †stripped)	per sq.	7.50†	7.00*	....	8.00*	8.50†	9.00	8.00	7.50	8.00†	7.00*	7.45	7.50
(45) Roofing Slate Surf. (*heavy, †extra heavy)	per sq.	3.50**	3.00**	....	3.25*	3.90	....	....	3.00	....	3.00*	3.00*	....
(46) Roofing Smooth Surf. (*light, †medium, §heavy)	per sq.	3.25§*	3.25§*	3.30§	3.50§	3.80	....	....	....	....	2.10*	3.15§	....
(47) Stucco Board, Medium wt.	per M. sq. ft.	55.00	60.00*	....	....	....	70.00	....	55.00	55.00	60.00	....	....
(48) Stucco Board, Narrow Key	per M. sq. ft.	....	....	60.00	60.00	68.00	75.00	65.00	65.00	60.00	....	....	70.00
LUMBER ITEMS					*								
(49) Wood Lath, No. 1 (Size 4 ft.)	per M.	12.00	....	....	13.00	....	....	....	12.00	12.00	12.00	11.00*	....
(50) No. 1 Yellow Pine Dimension 12 to 16 ft	per M. Board ft.	46.00*	....	....	42.00	....	....	....	42.00	47.00	45.00	....	....
(51) 1x10 No. 1 Shiplap, Y. P., all lengths	per M. Board ft.	48.00	....	....	....	....	....	....	45.00	60.00	45.00	....	....
(52) 1x10 No. 2 Shiplap, Y. P., all lengths	per M. Board ft.	45.00	....	....	42.00	....	....	....	40.00	45.00	45.00	....	....
(53) 1x4 No. 2 Sheathing	per M. Board ft.	38.00	....	....	42.00	....	....	....	40.00	45.00	40.00	....	....
(54) 1x4 "B" Flooring	per M. Board ft.	70.00	....	....	65.00	....	....	....	65.00	65.00	80.00	....	....
(55) Yellow Pine Clear Finish	per M. Board ft.	100.00	....	....	100.00	....	....	....	90.00	110.00	100.00	....	....
(56) 1x6 "B&Btr" Drop Siding	per M. Board ft.	....	....	....	70.00	....	....	....	....	65.00	....	....	....
(57) 1x6 No. 1 Common Drop Siding	per M. Board ft.	50.00	....	....	60.00	....	....	....	65.00	58.00	....	....	....
(58) Cypress Finish Lumber	per M. Board ft.	130.00	....	....	30.00	....	....	....	....	170.00	165.00	....	....
(59) ¾x4 "B" Partition	per M. Board ft.	70.00	....	....	70.00	....	....	....	90.00	75.00	90.00	....	....
(60) ½x4 "B" Ceiling	per M. Board ft.	60.00	....	....	60.00	....	....	....	70.00	60.00	....	....	....
(61) ½x5 Clear Rdwd. Bevel Siding	per M. Board ft.	60.00*	....	....	60.00	....	....	....	....	75.00	80.00*	....	....
(62) Mouldings, Yellow Pine	over list	1.25	....	....	1.25*	....	....	....	....	1.25	1.50*	....	....
(63) Washington 16 in., 5/2 Clears	per M.	7.25	....	....	6.50	....	....	....	8.00	7.50	7.00	....	....
(64) Washington 16 in., 5/2 Clears	per sq.	6.75*	....	....	5.75	....	....	....	....	7.00	....	....	....
(65) Canadian 16 in., 5/2 xxxxx Clears	per M.	6.50*	....	....	7.50	....	....	....	....	....	....	....	....
(66) Canadian 16 in., 5/2 xxxxx Clears	per sq.	6.75	....	....	6.60	....	....	....	....	....	....	....	....
(67) 1x6 in.-8 in.- 10 in. 12 in., No. 1 Com. Yellow Pine Boards	per M.	46.00*	....	....	....	....	....	....	60.00	60.00	....	....	....

*(Above item 49)—No lumber revisions received for this issue from this city.

(‡) Means no cloth bags used.

Lime (bulk, Item No. 1)—Reading, 80 lb. bu.; (Barreled, Item 2)—Newark includes bbls., returned at 10c; (Item 3), finishing; returned bags, 10c; Philadelphia, per bu. Buffalo, steel drums; (Item No. 3)—Newark, returned bags, 15c each.

Crushed Stone (4)—Pittsburgh, size 1 in.

Common Brick (Item 6)—Philadelphia, f. o. b. job. mfrs. retail price. Buffalo, loads of 1200.

Flue Lining (Items No. 10, 11)—Erie, (10) 8x8 in., (11) 8x12 in.

Fire Clay (Item 13)—Return bags, Elmira, 15c; Jamestown, none; Pittsburgh, paper sacks, $2.00 extra per ton, in cloth sacks. with no allowance for returned sacks. No credit for returned sacks. Buffalo, Scranton, returned sks., 25c.

Gravel (Item No. 14)—Philadelphia; Scranton, 2400 lb. yd.; Elmira, 2500 lb. yd.; 2000 lb. ton, Reading; Pittsburgh, del. price river front, longer hauls up to $3.00. F. O. B. Float, $1.60.

Hair (19)—Lbs. per bu., Pittsburgh, Elmira, 4; Scranton, 7; price per lb., Erie; old stock, Rochester, Pittsburgh, fibre; Allentown Govt. Paterson, per lb.

Paving Block (Item 31)—Buffalo, on application.

Sand (Item 34)—2500 lb. yd., Buffalo; Elmira, 2600 lb. yd.; Pittsburgh, del. price river front, longer hauls up to $3.00. F. O. B. Float, $1.60.

Wall Plaster (Items 39, 40, 41)—Returned sacks, 15c, Jamestown, Allentown, Scranton, Pittsburgh, Philadelphia, Buffalo; 20c, Erie; Newark, 15c credit for returned sacks.

Wall Ties (Item 42)—Corrugated. Allentown, Elmira; per box, Pittsburgh.

Roofing, Slate Surf. (Item 45)—70 lbs., Elmira; 75 lbs., Rochester.

Roofing, Smooth Surf. (Item 46)—55 lbs., Elmira, Rochester.

Stucco Board (Item 47)—Rochester, Sheetrock.

(Item 49)—Newark, spruce.

(Item 50)—Elmira, 12 ft. and less.

(Item 61)—Scranton, white pine; Elmira, red cedar; **(Item 62)**—Jamestown, per 1½ inches; Scranton, per 100 lin. ft., moulding count; **(Item 64)**—Elmira, stars; **(Item 65)**—Elmira, 18 in., perfect; **(Item 67)**—Elmira, 1 in., 8 in., 10 in., No. 2 Com.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

BUILDING SUPPLIES LISTED. MIDDLE AND SOUTHERN ATLANTIC STATES

All prices are retail, delivered-on-the-job, unless otherwise noted.

An asterisk (*) after a figure, refers to note below.

A star (★) after city name, denotes no revisions received.

		Trenton, N. J.	Wilmington, Del.	Washington, D. C.	Baltimore, Md.	Norfolk, Va.	Richmond, Va.	Huntington, W. Va.	Fairmont, W. Va.	Wheeling	Atlanta, Ga.
(1)	Bulk Lime, per cwt.	$0.60*	$0.90	$0.75	$ 0.51*	....	....	....	....	....	$1.50*
(2)	Barreled Lime, 180 lbs. (net) bbls., per bbl.	*	....	2.75	2.50	$2.75	$2.75	$2.90	$3.00	$3.25	2.15
(3)	Barreled Lime, 280 lbs. (net) bbls., per bbl.	*	....	....	....	....	....	....	....	....	....
(4)	Crushed Stone, per ton	4.50	3.30	....	4.50	3.00	3.75	....	5.00	7.00	2.50*
(5)	Crushed Stone, per yd.	....	4.50	....	3.65	....	....	....	....	....	....
(6)	Common Brick, standard quality and sizes (8x2¼x3¼), per M.	22.00	26.00	22.00	25.00*	20.50	25.00	18.75	32.00	24.00	12.50*
(7)	Corner Bead, galvanized, per ft.	06	.04	.06	.05	.06	.06	.07	.04	.06	.06
(8)	Drain Tile, 4 in., per ft.	....	.10	.08	.07	.08	.10	.075	.06	.06	.115
(9)	Drain Tile, 6 in., per ft.	....	....	....	.14	.12	.15	.12	.10	.09	.125
(10)	Flue Lining, 8½ in. x 8½ in., per ft.	....	.36	.25	.30	.36	.36	.342	.36	.30	.55
(11)	Flue Lining, 8½ in. x 13 in., per ft.	.63	.54	.40	.45	.54	.54	.513	.54	.45	.80
(12)	Fire Brick, Standard 9 in. No. 1 Clay, per M.	100.00	80.00	85.00	75.00	70.00	100.00	60.00	60.00	75.00	65.00
(13)	Fire Clay, in 100- lb. cloth bags, inc. bags, per ton	25.00	21.00	25.00*	18.00	25.00	25.00*	15.00*	14.00*	12.50*	20.00*
(14)	Gravel, washed, per yd.	2.50*	2.80	2.25*	2.50	4.00	3.75	3.00	4.50	2.40*	....
(15)	Hollow Building Tile (8x12x12 in.), per M.	....	....	....	....	....	....	....	285.00	230.00	....
(16)	Hollow Building Tile (8x5x12 in.), per M.	....	125.00	130.00	125.00	160.00	....	85.00	120.00	110.00	$87.60*
(17)	Hydrated Lime (masons) in 50 lb. paper bags, per bag	.475	.55	.45	.375	21.00*	20.00*	21 00*	.44	.60	1.75*
(18)	Hydrated Lime (finishing) in 50 lb. paper bags, per bag	.65	.75	.57	.55	24.00*	25.00*	22.00*	.575	.60	2.75
(19)	Hair, per bu.	.45	.42	.50	.50	.60	.75	....	.12*	.75	1.00*
(20)	Metal Lath, Expanded, Gauge No. 24, wt. 3.4 lbs. ‡, per yd.	.38	.40	.32	.355	.40	.35	.38	.36	.38	.41
(21)	Metal Lath, Expanded, Gauge No. 25, wt. 3 lbs., per yd.	.37	.35	.43	.305*	....	.35*	35	....	.40	.345
(22)	Mortar Color, red, per lb.	.04	.04	.06	.035	.05	.05	....	.0265	.035	.0225
(23)	Mortar Color, buff, per lb.	.04	.04	.07	.035	.05	.06	.03	.037	.035	....
(24)	Mortar Color, double strength black, per lb.	.10	.12	.10	.06	.15	.06	.05	....	.04	.04
(25)	Partition Tile, Clay (3x12x12 in.), per M.	....	140.00	130.00	147.50*	180.00	180.00	113.00	....	130.00	140.00
(26)	Partition Tile, Clay (4x12x12 in.), per M.	....	150.00	130.00	157.50*	180.00	200.00	130.00	145.00	140.00	150.00
(27)	Partition Tile, Gypsum (3x12x30 in.), per ft.	.18	.17	.15	.15	....	.18	.15	....	....	....
(28)	Partition Tile, Gypsum (4x12x30 in.), per ft.	.20	.19	.17	.18	....	.20	.17	....	....	....
(29)	Portland Cement, 4 sacks to bbl., (excluding sks.), per bbl.	3.40	3 60	3.00	2.87	3.70	3.40	3.50	3.20	3.00	3.45
(30)	Extra charge for each cloth sk., per sk.	.10	.25	.10	.07	.075	.10	.10	.10	.10	.10
(31)	Paving Block, vitrified (3½x4x8½ in.), per M.	65.00*	50.00	....	50.00	....	60.00	32.00*	....	....	....
(32)	Plaster Board, ⅜ in. thick, Per M. sq. ft.	37 50*	40.00	32.00	37.50	....	35.00	42.50	38.00	42.50	42.50
(33)	Sand (Building), per ton	2.25	2.35	1.55	2.00	2.00	2.75	....	4.00	2.60	....
(34)	Sand (Building), per yd.	....	2.80	2.00	2.50	2.50	3.00	2.25	....	....	1.25
(35)	Sewer Pipe, single strength, off list, per cent.	30%	35%	25%	50%	40%	40%	43%	40%	45%	40%
(36)	Wall Coping, 9 in., per ft.	.28	.26	.24	.26	.24	.24	.228	.22	.22	.45
(37)	Wall Coping, 13 in., per ft.	.42	.39	.36	.39	.36	.36	.342	.33	.33	.55
(38)	Wall Plaster, neat, in paper, in 80 lb. bags, per ton	22.00	20.00	....	....	....	24 00	20.00*	....	23.00	....
(39)	Wall Plaster, neat, in cloth, 100 lb. sks., inc. sks., per ton	....	23.50	23.00*	20.25	22.50*	24.00*	24.00*	23.00*	25.00*	22.00*
(40)	Wall Plaster, sanded, in cloth 100 lb. sks., inc. sks., per ton	....	24.00	23.00*	21.50	22.50*	24.00*	22.00*	....	16.00	....
(41)	Wall Plaster, wood fibre, in cloth, 100 lb. sks., inc. sks., per ton	....	25.00	27.00*	27.00	22.50*	24.00*	22.00*	23.00*	25.00*	....
(42)	Wall Ties, galvanized, per M.	4.50	5.00	5.00	5.00	5.00	5.00	4.50	4.00	5.00	4.25
(43)	Wall Plugs, per M.	....	25.00	28.00	25.00	....	....	20.00	....	16.00	....
(44)	Asphalt Shingle (*singles; †stripped), per sq.	8.00†	8.50	7.50	6.30†	....	....	8.50*	7.50*	7.75*	7.00*
(45)	Roofing Slate Surf. (*heavy, †extra heavy), per sq.	3.50*	....	3.00†*	3.10†*	6.00†	....	3.75*	2.75†*	3.00†*	3.00§
(46)	Roofing Smooth Surf. (*light, †medium, §heavy), per sq.	2.75†	....	2.90§*	2.65§	4.50†	....	3.10§	3.00§*	2.80§*	2.70§
(47)	Stucco Board, Medium wt., per M. sq. ft.	....	....	75.00	....	60.00	65.00	....	60.00*	55.00	....
(48)	Stucco Board, Narrow Key, per M. sq. ft.	65.00	68.00	....	....	....	....	....	....	....	....
	LUMBER ITEMS			*	*	*		*			
(49)	Wood Lath, No. 1 (size 4 ft.), per M.	12.00*	....	6.75	14.00	6.50	6.00	8.00	....	....	....
(50)	No. 1 Yellow Pine Dimension 12 to 16 ft., per M. Board ft.	....	....	35.00	55.00	35.00	....	42.00	....	....	....
(51)	1x10 No. 1 Shiplap, Y. P., all lengths, per M. Board ft.	....	....	55.00	....	80.00	....	50.00	....	....	....
(52)	1x10 No. 2 Shiplap, Y. P., all lengths, per M. Board ft.	....	....	55.00	....	40.00	....	42.00	....	....	....
(53)	1x4 No. 2 Sheathing, per M. Board ft.	....	....	33.00	51.00	30.00	....	....	....	....	....
(54)	1x4 "B" Flooring, per M. Board ft.	....	....	60.00	100.00	70.00	....	65.00	....	....	....
(55)	Yellow Pine Clear Finish, per M. Board ft.	....	....	75.00	....	85.00	....	70.00	....	....	....
(56)	1x6 "B&Btr" Drop Siding, per M. Board ft.	....	....	....	....	70.00	....	65.00	....	....	....
(57)	1x6 No. 1 Common Drop Siding, per M. Board ft.	....	....	....	....	55.00	....	58.00	....	....	....
(58)	Cypress Finish Lumber, per M. Board ft.	....	....	....	....	150.00	....	160.00	....	....	....
(59)	¾x4 "B" Partition, per M. Board ft.	....	....	65.00	100.00	70.00	....	75.00	....	....	....
(60)	½x4 "B" Ceiling, per M. Board ft.	....	....	50.00	....	45.00	....	55.00	....	....	....
(61)	½x5 Clear Rdwd. Bevel Siding, per M. Board ft.	....	....	....	....	75.00	....	....	....	....	....
(62)	Mouldings, Yellow Pine, over list	....	....	....	....	1.00	....	1.25	....	....	....
(63)	Washington 16 in., 5/2 Clears, per M.	....	....	....	....	....	....	....	....	....	....
(64)	Washington 16 in., 5/2 Clears, per sq.	....	....	....	....	....	....	....	....	....	....
(65)	Canadian 16 in., 5/2 xxxxx Clears, per M.	....	....	....	....	15.00	....	8.00*	....	....	....
(66)	Canadian 16 in., 5/2 xxxxx Clears, per sq.	....	....	....	....	....	....	....	....	....	....
(67)	1x6 in.-8 in.- 10 in. 12 in., No. 1 Com. Yellow Pine Boards, per M.	....	....	....	60.00	40.00	....	60.00	....	....	....

*(Above item 49)—No lumber revisions received for this issue from this city.

(‡) Means no cloth bags.

Lime (bulk, Item No. 1)—Baltimore, per bu.; Atlanta, bbl. of 3 sacks; Trenton, 70 lb. bu. **(Barreled)** Trenton, not handled locally, supply from Philadelphia. **Hydrated** (Items 17, 18)—Ton lot price, Richmond, Norfolk, Huntington; Atlanta, barrel price.

Crushed Stone (Item No. 4, 5)—Atlanta, 2,600 lb. yd.

Common Brick (6)—Baltimore, f. o. b. job, mfrs. ret. price. Atlanta, f. o. b. Atlanta.

Fire Clay (13)—Washington, Atlanta, no credit for sacks; Wheeling, 15c credit for sacks; Fairmont, Huntington, 10c credit for sacks; bulk only, Richmond.

Gravel (14)—Washington, 2,700 lb. yd.; ton price only, Trenton, Wheeling, Washington.

Hollow Bldg. Tile (Item 16)—Atlanta, back up tile, 2 cell, carload price.

Hair (19)—Bu. of 4 lb., Atlanta; Fairmont, per lb.

Metal Lath (Item 21)—Richmond, Baltimore, Gauge No. 27.

Partition Tile (25, 26)—Baltimore, little demand.

Paving Block (31)—Huntington, culls; Trenton, known as paving brick.

Plaster Board (Item 32)—Trenton, carloads.

Wall Plaster (Items 38, 39, 40, 41)—Sacks, 15c credit, Washington, Wheeling, Huntington, Atlanta, Fairmont; sacks 14½c credit, Richmond; returned sacks, 10c, Norfolk.

Roofing, Slate Surf. (Item 45)—80 lb., Washington, Baltimore; 85 lb., Fairmont; Wheeling, 85 lbs.

Roofing, Smooth Surf. (Item 46)—55 lb., Washington, Fairmont; Wheeling, rolls, 55 lbs.

Stucco Board (Item 48)—Creosoted, Fairmont.

(Item 49)—Spruce, Trenton.

(Item 65)—Huntington, XAXRC.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

SOUTHERN AND SOUTHWESTERN STATES

BUILDING SUPPLIES LISTED.
All prices are retail,
delivered-on-the-job, unless otherwise noted.
An asterisk (*) after a figure, refers to note below.
A star (★) after city name, denotes no revisions received.

	Miami, Fla.	Tampa, Fla.	St. Petersburg	Louisville	Lexington,	Memphis, Tenn.	Nashville, Tenn.	Birmingham, Ala.	New Orleans, La.	El Paso, Tex.	Houston
(1) Bulk Lime.....per cwt.	....	....	....	$0.75	$0.70*	....	$0.65*	....	$0 87	$0.625	$0.95*
(2) Barreled Lime, 180 lbs. (net) bbls.....per bbl.	$3.30	2.25	$2.80	$2.45*	2.75	$2.00	3.15	$2.25	2.10	2.25	3.00
(3) Barreled Lime, 280 lbs. (net) bbls.....per bbl.	....	....	....	....	....	....	5.00	....	....	....	....
(4) Crushed Stone.....per ton	....	....	....	....	3.50	....	....	....	....	....	4.00
(5) Crushed Stone.....per yd.	2.75	7.00	5 75	....	....	2.75*	3.15	....	....	....	4.00
(6) Common Brick, standard quality and sizes (8x2¼x3¾)per M.	28.00	20.00*	21.00	20.00	21.00	16.00	18.00	23.00	15.00	16.00	20.00
(7) Corner Bead, galvanized.....per ft.	.07	.05	.07	.05	.08	.06	.05	.07	.07	.06	.045
(8) Drain Tile, 4 in.....per ft.	.12	....	....	.045	.10	.05	.08	.07	.075	....	..13
(9) Drain Tile, 6 in.....per ft.	....	....	....	.084	....	.10	.14	.15	.12	....	.16
(10) Flue Lining, 8½ in x 8½ in.....per ft.	.40	.40	.45	.27	.42	.34	.36	.30	.30	....	.44
(11) Flue Lining, 8½ in. x 13 in.....per ft.	.60	.60	.58	.405	.63	.51	.54	.40	.42	....	.65
(12) Fire Brick, Standard 9-in. No. 1 clay.....per M.	85.00	80.00	76.00	70.00	80.00	62.00	70.00	80.00	61.10	90.00*	65.00
(13) Fire Clay, in 100-lb. cloth bags, including bags.....per ton	40.00*	20.00	40.00	15.00*	30.00	20.00*	23.00*	20.00*	15.98	....	20.00*
(14) Gravel, washed.....per yd.	....	....	. ..	....	3.65	3.60	2.25	....	3.30	....	3.75
(15) Hollow Building Tile (8x12x12 in).....per M.	. ..	280.00	....	227.40	....	....	....	....	....	....	....
(16) Hollow Building Tile (8x5x12 in).....per M.	200.00	137.50	125.00	101.10	107.50*	130.00	134.70*	116.00	....	90.00	115.10*
(17) Hydrated Lime (masons) in 50-lb. paper bags.....per bag	.75	.60*	?80	55	75	.50	.55	.62	.53	.60	.50*
(18) Hydrated Lime (finishing) in 50-lb. paper bags.....per bag	.85	.75*	.80	.75	.75	60	73	.62	.62	....	.50*
(19) Hair.....per bu.	1.00	.75	.75	75	....	.60	.55	.50	.56	....	85
(20) Metal Lath, Expanded, Gauge No. 24, wt. 3.4 lbs.‡...per yd.	.45*	.45	.52	.45	.40	.35	.40	.40	.38	.37	.401
(21) Metal Lath, Expanded, Gauge No. 25, wt. 3 lbs.....per yd.	.55*	.31*	.42	...	.40	....	....	.42	.38	.40*	....
(22) Mortar Color, red.....per lb.	.055	.04	.04	.03	.03	.02	.05	.05	.05	.0275*	.0325
(23) Mortar Color, buff.....per lb.	.06	.04	.06	.03	....	.03	.08	.025	.05	.025*	.04
(24) Mortar Color, double strength black.....per lb.	.08	.07	.06	.06	....	045	.16	.08	.06	.045*	.0475
(25) Partition Tile, Clay (3x12x12 in.).....per M.	....	....	....	101.10	119.60	130.00	134.70	170.00	126.90	120.00	128.00*
(26) Partition Tile, Clay (4x12x12 in.).....per M.	....	....	160.00	113.70	134.50	145.00	151.60	138.50	131.60	120.00	133.70*
(27) Partition Tile, Gypsum (3x12x30 in.).....per ft.	....	....	....	....	....	....	.1375	.20	.12	.125	.13
(28) Partition Tile, Gypsum (4x12x30 in.).....per ft.	....	....	....	....	....	....	.165	25	....	....	.165
(29) Portland Cement, 4 sacks to bbl., (excluding sks.)per bbl.	4.72	3.40	3.80	2.70	4.10	3.40	4.14	3 90	3.20	3.50	3.35
(30) Extra charge for each cloth sk.....per sk.	.10	.10	.05	.10	.10	.10	.10	.10	.10	.10	.10
(31) Paving Block, vitrified (3½x4x8½ in.).....per M.	....	....	....	....	....	....	....	34.00	40.40	....	....
(32) Plaster Board, ⅜ in. thick.....per M. sq. ft.	60.00*	40.00	41.00	50.00	50.00	52.50*	44.00	65.00	41.36	....	60.00
(33) Sand (Building).....per ton	....	....	1.00	....	3.75	....	....	1.85	....	1.75	1.75
(34) Sand (Building).....per yd.	1.60	3.50	1.40	....	4.50	2.75	3.00	1.85	1.88	1.75	1 60
(35) Sewer Pipe, single strength, off list.....per cent.	*	20%*	*	55%	35%	....	40%	30%	*	....	*
(36) Wall Coping, 9 in.....per ft.	....	....	....	55%	35%	.21	.24	.25	.16	....	.31
(37) WallCoping, 13 in.....per ft.	....	....	....	55%	30%	.30	.36	.35	.23	....	.44
(38) Wall Plaster, neat, in paper, in 80-lb. bags.....per ton	....	22.00	....	....	....	....	....	24.00	....	16.00	....
(39) Wall Plaster, neat, in cloth, 100-lb. sks., inc. sks.....per ton	29.00	24.00	27.50	25.00	28.00	24.00*	27.00	24.00*	22.36	18.00*	25.00*
(40) Wall Plaster, sanded, in cloth, 100-lb., inc. sks.....per ton	....	....	....	....	....	....	....	....	....	....	....
(41) Wall Plaster, wood fibre, in cloth, 100-lb., inc. sks....per ton	29.00*	....	27.50	25.00	....	24.00*	....	26.00*	....	18.00*	....
(42) Wall Ties, galvanized.....per M.	5.00	4.00	5 00	4.00*	5 00	4.50	5.00	4.50	4 75	4.10*	5.25*
(43) Wall Plugs.....per M.	....	....	....	30.00	....	18.50	22.50	....	....	....	30.00
(44) Asphalt Shingle (*singles; †stripped).....per sq.	10.00	8.50*	8.00†	6.25	....	7.50*	8.00*	9.15	7.00	....	10.00
(45) Roofing Slate Surf. (*heavy, †extra heavy).....per sq.	4.00**	3.25	3.50†	3.00†	4.00*	2.80†	3.25†*	4.00	3.00	4.50*	4.00**
(46) Roofing Smooth Surf. (*light, †medium, §heavy)....per sq.	3.50§	3.50§	3.25§	....	3.75§	2.85§	3.10§*	3.00	2.50	4.25§	3.50§*
(47) Stucco Board, Medium wt.....per M. sq. ft.	....	65 00*	....	60.00	....	....	....	60.00	....	....	....
(48) Stucco Board, Narrow Key.....per M. sq. ft.	....	9.50*	....	....	....	....	....	....	...	....	....
LUMBER ITEMS											
(49) Wood Lath, No. 1 (size 4 ft.).....per M.	11.00*	9.50*	10.00*	....	....	6.00*	7.25	7.00	5.47	12.00	6.00*
(50) No. 1 Yellow Pine Dimension 12 to 16 ft.....per M. Board ft.	35.00	45.00	....	....	....	30.00	42.50	36.00	55.00	50.00	37.50*
(51) 1x10 No. 1 Shiplap, Y. P., all lengths.....per M. Board ft.	90.00	60.00	....	....	....	....	50.00	70.00	75.00	50.00	40.00
(52) 1x10 No. 2 Shiplap, Y. P., all lengths.....per M. Board ft.	40.00	45.00	....	....	....	32.50	40.00	49.00	55.00	40.00	28.00
(53) 1x4 No. 2 Sheathing.....per M. Board ft.	40.00	40.00	....	....	....	30.00	40.00	35.00	48.00	40.00	25.00
(54) 1x4 "B" Flooring.....per M. Board ft.	65.00	60.00	....	....	....	60.00	55.00	60.00	90.00	58.50	50.00
(55) Yellow Pine Clear Finish.....per M. Board ft.	80.00	100.00	....	....	....	75.00	90.00	80.00	....	80.00	65.00
(56) 1x6 "B&Btr" Drop Siding.....per M. Board ft.	65.00	70.00	....	....	....	....	80.00	70.00	90.00	....	50.00
(57) 1x6 No. 1 Common Drop Siding.....per M Board. ft.	55.00	50.00	....	....	....	50.00	37.50	55.00	75.00	55.00	40.00
(58) Cypress Finish Lumber.....per M. Board ft.	180.00	150.00	....	....	....	150.00	175.00	....	190.00	....	150.00*
(59) ¾x4 "B" Partition.....per M. Board ft.	70.00	100.00	....	....	....	60.00	60.00	70.00	90.00	80.00	70.00
(60) ½x4 "B" Ceiling.....per M. Board ft.	50.00	50.00	....	....	....	55.00	52.50	60.00	80.00	....	40.00
(61) ½x5 Clear Rdwd. Bevel Siding.....per M. Board ft.	80.00*	80.00	....	....	....	....	....	....	85.00	....	65.00*
(62) Mouldings, Yellow Pine.....over list	1.25	1.50	....	....	....	*	10%	1.00	....	50%	*
(63) Washington 16 in., 5/2 Clears.....per M.	9.50	....	....	....	....	7.50	6.50	8.00	....	....	7.00
(64) Washington 16 in., 5/2 Clears.....per sq.	....	....	....	....	....	....	....	....	....	....	6.25
(65) Canadian 16 in., 5/2 xxxxx Clears.....per M.	....	....	....	....	....	....	....	8.75	....	....	....
(66) Canadian 16 in., 5/2 xxxxx Clears.....per sq.	....	....	....	....	....	....	....	....	....	....	....
(67) 1x6 in.-8 in.-10 in.-12 in., No. 1 Yellow Pine Boards...per M	90.00	60.00*	....	....	....	60.00	....	60.00	60.00	50.00	40.00*

*(Above item 49)—No lumber revisions received for this issue from this city.

(‡) Means no cloth bags used.

Lime (Item No. 1, bulk)—Nashville, 80 lb. bu. Lexington, 70 lbs.; Houston c/L f. o. b. Houston. **Barreled Lime,** (Item 2 and 3), Louisville, blue river lime. **Hydrated** (Items 17, 18)—Tampa, 40 lb. bags, Florida lime, 60c; Houston, 40 lb. bags.

Crushed Stone (Item 4-5)—Memphis, f. o. b. cars, per ton.

Common Brick (Item 6)—Tampa, Ala. and Ga. Red.

Fire Brick (Item 12)—Carload lots, El Paso.

Fire Clay (Item 13)—15c credit, Nashville; no credit, Louisville, Birmingham, Houston, Miami, Memphis.

Hollow Building Tile (15, 16)—Houston, Interlocking tile, $134.00 per M; Nashville, Houston, Lexington, f. o. b. cars.

Metal Lath (Item 21)—El Paso, Gauge No. 27; Miami, Gauge 26, galvanized, per sq. yd.; (Item 20)—Black Painted Expanded Key Lath, Gauge 27; Tampa, Gauge 27.

Mortar Color (Item 22, 23, 24)—El Paso, barreled lot price.

Partition Tile Clay (Items 25, 26)—Houston, mfrs. price.

Plaster Board (Item 32)—Miami, Memphis, ¼ inch.

Sewer Pipe (Item 35)—St. Petersburg, net; Houston, various per cent. off list; New Orleans, Miami list; Tampa, less.

Wall Plaster (38, 39, 40, 41)—15c sacks, Birmingham, El Paso, Memphis, Miami; hair fibre, Houston, gross ton, 15c sacks.

Wall Ties (42)—Corrugated, El Paso, Louisville, Houston.

Roofing, Slate Surf. (Item 45)—85 lbs. Miami, Nashville, Houston.

Roofing, Smooth Surf. (Item 46)—55 lbs., Nashville, Houston.

Stucco Board (Item 47-48)—Tampa, creosoted.

(Item 49)—Memphis, yellow pine; Miami, Houston, Tampa, St. Petersburg, cypress; **(Item 50)**—Houston, 20 ft. average; **(Item 58)**—Houston, $115.00 to $300.00; **(Item 61)**—Houston, pine; Miami, cypress; **(Item 62)**—Memphis, Houston, list; **(Item 67)**—Houston, 6 in., 8 in. and 10 in., $45.00, 12 in., $55.00; Tampa, $60.00 to $80.00.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

BUILDING SUPPLIES LISTED.
All prices are retail,
delivered-on-the-job, unless otherwise noted.
An asterisk (*) after a figure, refers to note below.
A star (★) after city name, denotes no revisions received.

SOUTHWESTERN AND CENTRAL STATES

		Dallas, Tex.	Topeka, Kan.	Little Rock, Ark.	Okla. City Okla.	Cincinnati, O.	Cleveland	Columbus	Toledo	Detroit, Mich.	Evansville, Ind.
(1)	Bulk Lime...per cwt.	....	....	....	$1.10	$1.05	$1.10	$0.50	$0.95	$1.00	$0.90
(2)	Barreled Lime, 180 lbs. (net) bbls...per bbl.	$3.00	$3.25	$3.00	3.25	3.25	3.45	2.50	....	....	2.00
(3)	Barreled Lime, 280 lbs. (net) bbls...per bbl.	....	....	....	....	....	....	....	....	....	....
(4)	Crushed Stone...per ton	....	....	....	3.60	2.90*	3.60	3.00*	3.70	3.00	....
(5)	Crushed Stone...per yd.	....	....	....	....	....	4.50	....	....	....	....
(6)	Common Brick, standard quality and sizes (8x2¼x3¾)...per M.	20.00	35.00	12.50*	18.50	18.00*	15.00	19.00	19.00	18.00	14.50
(7)	Corner Bead, galvanized...per ft.	.475	....	.06	.07	.06	.06	.07	.04	.05	.04
(8)	Drain Tile, 4 in...per ft.	.15	.105	.10	.04	.0708	.055	.06	.06	.07	.031
(9)	Drain Tile, 6 in...per ft.	.20	.32	.15	.05	.125	.087	.105	.089	.13	.047
(10)	Flue Lining, 8½ in. x 8½ in...per ft.	.55	.55	.55	.40	.348	52⅔*	.30	45⅔*	.33	.32
(11)	Flue Lining, 8½ in. x 13 in...per ft.	.80	.80	.70	.55	.522	52⅔*	.45	45⅔*	.495	.48
(12)	Fire Brick, Standard 9 in. No. 1 clay...per M.	80.00	....	80.00	70.00	68.00	70.00	65.00	63.00	70.00	60.00
(13)	Fire Clay, in 100-lb. cloth bags, including bags...per ton	30.00	....	25.00*	20.00	.90‡*	16.00	.85*	12.00	13.00	15.00
(14)	Gravel, washed...per yd.	....	....	....	3.60*	2.75*	....	1.25*	2.30	3.50	1.80
(15)	Hollow Building Tile (8x12x12 in.)...per M.	....	....	....	....	....	....	....	....	....	....
(16)	Hollow Building Tile (8x5x12 in.)...per M.	100.00*	....	....	93.00	75.50*	62.00	41.00	90.00	95.00	70.00
(17)	Hydrated Lime (masons) in 50 lb. paper bags...per bag	.60*	.65	.75	.75	.54	.40	.44	.50	.50	.60
(18)	Hydrated Lime (finishing) in 50 lb. paper bags...per bag	.55*	....	.75	.75	.60	.45	.45	.52	.50	.60
(19)	Hair...per bu.	.85	....	1.00	....	.55	.75	.75	.75	.20*	.60
(20)	Metal Lath, Expanded, Gauge No. 24, wt. 3.4 lbs.‡...per yd.	.391*	.40	.50	.466	.41	.44	.40	.42	.38	.35
(21)	Metal Lath, Expanded, Gauge No. 25, wt. 3 lbs...per yd.	....	....	.46	....	....	....	....	.48	....	.34
(22)	Mortar Color, red...per lb.	.06*	.06	.03	.03	.025	.0215	.025	.04	.03	.025
(23)	Mortar Color, buff...per lb.	.06*	.06	.045	.04	.036	.0315	.03	.04	.05	.03
(24)	Mortar Color, double strength black...per lb.	.08*	....	.05	.07	.065	.049	.05	.05	.06	.055
(25)	Partition Tile, Clay (3x12x12 in.)...per M.	120.00	130.00	140.00	....	70.00*	71.00	89.00	110.00	100.35	77.50
(26)	Partition Tile, Clay (4x12x12 in.)...per M.	130.00*	....	160.00	....	89.00*	81.00	128.90	125.00	107.00	90.00
(27)	Partition Tile, Gypsum (3x12x30 in.)...per ft.	.13	....	....	....	.17	.17	.135	.145	.17	....
(28)	Partition Tile, Gypsum (4x12x30 in.)...per ft.	.1525	....	....	....	.18	.21	.145	.17	.20	....
(29)	Portland Cement, 4 sacks to bbl. (excluding sks.)...per bbl.	3.00	3.40	4.20	3.80	2.60	2.92	3.00	3.68	3.20	3.00
(30)	Extra charge for each cloth sk...per sk.	.10	..25	.10	.25	.25	.10	.10	.08	.10	.10
(31)	Paving Block, vitrified (3½x4x8½ in.)...per M.	....	....	....	....	....	....	40.00	45.00*	....	....
(32)	Plaster Board, ⅜ in. thick...per M. sq. ft.	50.00	45.00	35.00	45.00	50.00	40.00	40.00	.31*	37.00	40.00
(33)	Sand (Building)...per ton	....	....	....	3.00	2.25*	2.75	3.50	2.30	3.50	....
(34)	Sand (Building)...per yd.	4.00	....	1.00*	....	2.30*	....	3.50	....	....	1.80
(35)	Sewer Pipe, single strength, off list...per cent.	20%	....	....	....	40%	52%	50%	40%	45%	50%
(36)	Wall Coping, 9 in...per ft.	.40	....	.35	.37	.24	52⅔*	45⅔*	47⅔*	35⅔*	.22
(37)	Wall Coping, 13 in...per ft.	.55	....	.45	.40	.36	52⅔*	45⅔*	47⅔*	35⅔*	.32
(38)	Wall Plaster, neat, in paper, in 80 lb. bags...per ton	....	....	....	20.00	23.25	20.00	17.00	....	24.00	....
(39)	Wall Plaster, neat, in cloth, 100 lb. sacks, including sacks...per ton	21.00	21.00	27.00*	22.00	25.00	22.00*	....	....	21.00*	23.00
(40)	Wall Plaster, sanded, in cloth, 100 lb., including sacks...per ton	....	....	....	....	....	12.50	16.00*	13.00*	15.00*	....
(41)	Wall Plaster, wood fibre, in cloth, 100 lb., including sacks...per ton	21.50	....	27.50*	22.00	25.00	22.00	....	15.60‡	21.00*	23.00
(42)	Wall Ties galvanized...per M.	5.00	....	4.75	4.00	4.75	3.60	2.50	3.75	3.00	2.50
(43)	Wall Plugs...per M.	22.50	....	25.00	30.00	....	....	....	15.00	....	....
(44)	Asphalt Shingle (*singles; †stripped)...per sq.	....	8.50	9.00*	7.00*	8.50*	6.25*	7.00†	7.25†	6.50†	7.00*
(45)	Roofing Slate Surf. (*heavy, †extra heavy)...per sq.	4.50*	4.25**	3.40†	3.50†	....	3.40†	3.00†	3.25†	3.00**	3.00*
(46)	Roofing Smooth Surf. (*light, †medium, §heavy)...per sq.	4.25§	4.00§	3.00§	3.00§	....	2.90§	2.25§	2.75§	2.40§*	2.75§*
(47)	Stucco Board, Medium wt...per M. sq. ft.	....	....	....	....	....	60.00	60.00	60.00	65.00	....
(48)	Stucco Board, Narrow Key...per M. sq. ft.	....	....	....	....	....	60.00	70.00	60.00	....	....
	LUMBER ITEMS		*	*			*				
(49)	Wood Lath, No. 1 (size 4 ft.)...per M.	10.50*	10.00	6.00	....	7.25	12.50*	10.00*	12.75*	18.00	6.50*
(50)	No. 1 Yellow Pine Dimension 12 to 16 ft...per M. Board ft.	37.50	40.00*	32.00	....	....	47.00	42.50	45.00	45.00	40.00
(51)	1x10 No. 1 Shiplap, Y. P., all lengths...per M. Board ft.	40.00	40.00	45.00	....	....	47.00*	....	....	70.00	3.75
(52)	1x10 No. 2 Shiplap, Y. P., all lengths...per M. Board ft.	30.00	40.00	32.00	....	....	40.00*	42.50	43.00	45.00	37.50
(53)	1x4 No. 2 Sheathing...per M. Board ft.	25.00	40.00	28.00	....	....	47.00	37.50	36.00	40.00	35.00
(54)	1x4 "B" Flooring...per M. Board ft.	50.00	60.00	50.00	....	....	81.00*	65.00	70.00	75.00	60.00
(55)	Yellow Pine Clear Finish...per M. Board ft.	65.00	90.00	70.00	....	....	95.00	90.00	100.00	135.00	90.00
(56)	1x6 "B&Btr" Drop Siding...per M. Board ft.	45.00	55.00	60.00	....	....	70.00	60.00	....	....	65.00
(57)	1x6 No. 1 Common Drop Siding...per M. Board ft.	40.00	....	45.00	....	....	63.00	50.00	55.00	50.00*	50.00
(58)	Cypress Finish Lumber...per M. Board ft.	170.00	140.00	....	....	....	122.00	140.00	120.00	160.00	50.00
(59)	¾x4 "B" Partition...per M. Board ft.	60.00	....	65.00	....	....	95.00	65.00	65.00*	75.00	75.00
(60)	½x4 "B" Ceiling...per M. Board ft.	50.00	....	50.00*	....	....	63.00*	55.00	50.00	65.00	50.00
(61)	½x5 Clear Rdwd. Bevel Siding...per M. Board ft.	75.00	60.00	50.00*	....	....	63.00	55.00	64.00	70.00	60.00
(62)	Mouldings, Yellow Pine...over list	*	....	25%	....	....	1.30*	1.25	1.25*	....	1.50
(63)	Washington 16 in., 5/2 Clears...per M.	6.50	5.50	....	....	....	7.70	6.50	6.50	7.00	6.00
(64)	Washington 16 in., 5/2 Clears...per sq.	....	....	....	....	....	....	....	....	....	....
(65)	Canadian 16 in., 5/2 xxxxx Clears...per M.	8.00	....	....	....	....	....	....	....	....	....
(66)	Canadian 16 in., 5/2 xxxxx Clears...per sq.	....	....	....	....	....	....	....	....	....	....
(67)	1x6 in.-8 in.-10 in.-12 in., No. 1 Com. Yellow Pine Boards...per M.	50.00	65.00	....	....	....	63.00	60.00	65.00	70.00	50.00

*(Above Item 49)—No lumber revisions received for this issue from this city.

(‡) Means no cloth bags used.

Lime, Hydrated (Item 17, 18)—Dallas, 40 lb. bags.

Crushed Stone (4)—Columbus, f. o. b. tipple stone at quarries; Cincinnati, bowlders.

Common Brick (6)—Little Rock, Cincinnati, f. o. b. cars.

Flue Lining (10, 11)—Per cent. off list, Toledo, Cleveland.

Fire Clay (Item 13)—Cincinnati, paper; Columbus, price per sack; single sack rate, no credit on returned sacks, Little Rock.

Gravel (14)—Columbus, tipple, per ton; Cincinnati, Okla. City, per ton.

Hollow Building Tile (Item 15-16)—Cincinnati, (15) 4 cell, (16) 2 cell, f. o. b. cars; 5% for cash, 10 days. Dallas (Item 17), Interlocking Tile, $115.00 per M.

Hair (19)—Detroit, per lb.;

Mortar Colors (Items 22-23-24) Dallas, paste.

Partition Tile, Clay (25, 26)—Cincinnati, carload lots, f. o. b. cars; Dallas, mfrs. price.

Paving Block (Item 31)—Toledo No. 2 quality.

Plaster Board (Item 32)—Per sheet, 32x36 ft., ⅜ in. thick, Toledo.

Sand (33, 34)—Cincinnati (33) concrete and (34) fine; Little Rock, f. o. b. yard.

Wall Coping (36, 37)—Per cent. off list, Toledo, Detroit, Columbus, Cleveland.

Wall Plaster (39, 40, 41)—Returned sacks, 15c, Cleveland, Evansville, Little Rock; sacks, 12c each, Detroit; Columbus, 80 lb. paper; Toledo, 8c sacks.

Roofing, Slate Surf. (Item 45)—85 lbs., Topeka; 80 lbs. Detroit.

Roofing, Smooth Surf. (Item 46)—55 lbs., Detroit, Evansville.

(Item 49)—Dallas, Cypress; Cleveland, white pine; Toledo, hemlock; Evansville, pine; Columbus, chestnut. **(Item 50)**—Topeka, white pine; **(Item 51)**—Cleveland, No. 2 Commercial; **(Item 52)**—Cleveland, No. 3; **(Item 54)**—Cleveland, No. 1 C.; **(Item 57)**—Detroit, No. 2. **(Item 59)**—Toledo, Select Com. Cypress D4S; **(Item 60)**—Cleveland, ⅝ in.; Little Rock, ⅝x4 in., **(Item 61)**—Little Rock, Y. P.; **(Item 62)**—Cleveland, Toledo, per 100 inches; Dallas, list.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

BUILDING SUPPLIES LISTED.
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An asterisk (*) after a figure, refers to note below.
A star (★) after city name, denotes no revisions received.

		INDIANA				ILLINOIS			
		Ft. Wayne††	Indianapolis	South Bend	Terre Haute	Bloomington, Ill.	Chicago	Moline	Peoria
(1)	Bulk Lime, per cwt.	$2.70*	$0.90	$2.35*	....	....	$1.50*	$0.90	.. .
(2)	Barreled Lime, 180 lbs. (net) bbls, per bbl.	....	....	2.75	....	$2.75	2.40	1.80	$2.75
(3)	Barreled Lime, 280 lbs. (net) bbls, per bbl.	....	....	....	....	....	....	....	....
(4)	Crushed Stone, per ton	4.50	4.00	....	$3.00	4.00	....	....	....
(5)	Crushed Stone, per yd.	....	4.00	....	....	....	3.00	3.75	....
(6)	Common Brick, standard quality and sizes (8x2¼x3¼), per M.	19.00	18.00	20.00	20.00	22.00	12.00	19.00	18.50
(7)	Corner Bead, galvanized, per ft.	.06	.05	.06	.06	.06	.04	.06	....
(8)	Drain Tile, 4 in., per ft.	.05	.06	....	....	.05	.06	.085	.0697
(9)	Drain Tile, 6 in., per ft.	.07	.12	.04	....	.09	.10	.12	.12
(10)	Flue Lining, 8½ in. x 8½ in., per ft.	.39	.70	.36	.325	.35	.28	.40	.40
(11)	Flue Lining, 8½ in. x 13 in., per ft.	.585	....	.54	.50	.55	.42	.45	.50
(12)	Fire Brick, Standard 9 in. No. 1 clay, per M.	75.00	70.00	65.00	60.00	75.00	80.00	70.00	64.00
(13)	Fire Clay, in 100-lb. cloth bags, including bags, per ton	13.00*	11.00	15.00*	15.00*	20.00*	22.00*	16.00	....
(14)	Gravel, washed, per yd.	....	....	2.25	3.00*	4.45*	3.00	3.15	....
(15)	Hollow Building Tile (8x12x12 in.), per M.	....	....	....	....	....	....	....	....
(16)	Hollow Building Tile (5x8x12 in.), per M.	110.00	85.00	115.00	....	100.00	93.75	92.00	78.00
(17)	Hydrated Lime (masons) in 50-lb. paper bags, per bag	.65	.52	.55	.50	.65‡	.45	.525	.50
(18)	Hydrated Lime (finishing) in 50-lb. paper bags, per bag	.65	.60	.60	.60	.65‡	.50	.625	.57
(19)	Hair, per bu.	.80	.40	.60	....	....	.525	.80	....
(20)	Metal Lath, Expanded, Gauge No. 24, wt. 3.4 lbs.‡, per yd.	.46	.38	.40	.40	....	.31	.38	.61
(21)	Metal Lath, Expanded, Gauge No. 25, wt. 3 lbs., per yd.	.45	.34	.37	.40	.35	.30	.38	....
(22)	Mortar Color, red, per lb.	.03*	.03*	.05	.04	.05	.05*	.05	03
(23)	Mortar Color, buff, per lb.	.04*	.04*	.05	.04	.05	.05*	.055	.04
(24)	Mortar Color, double strength black, per lb.	.06*	.06*	.06	.05	.07	.05*	.07	.06
(25)	Partition Tile, Clay (3x12x12 in.), per M.	....	96.00	80.00	....	....	87.50	....	....
(26)	Partition Tile, Clay (4x12x12 in.), per M.	....	110.00	85.00	....	....	88.00	....	....
(27)	Partition Tile, Gypsum (3x12x30 in.), per ft.	....	.155	....	....	....	.14	.14	....
(28)	Partition Tile, Gypsum (4x12x30 in.), per ft.	....	.175	....	....	....	.16	.16	....
(29)	Portland Cement, 4 sacks to bbl., (excluding sks.), per bbl.	3.40	3.60	3.20	3.00	3.20	2.55	2.90	3.20
(30)	Extra charge for each cloth sk, per sk.	.25	.07	.10	.25	.10	.10	.10	.10
(31)	Paving Block, vitrified (3½x4x8½ in.), per M.	50.00	....	50.00	....	....	....	38.00	....
(32)	Plaster Board, ⅜-in. thick, per M. sq. ft.	60.00	40.00	37.50	45.00	45.00	37.50	60.00	50.00
(33)	Sand (building), per ton	3.00*	....	....	....	3.50	....	....	....
(34)	Sand (building), per yd.	....	3.00	2.25	3.00*	4.00*	2.75	2.05	....
(35)	Sewer Pipe, single strength, off list, per cent.	35%	40%	45%	50%	40%	55%	42%	20%
(36)	Wall Coping, 9 in., per ft.	28	.25	.24	50%*	.25	.18*	.27	.25
(37)	Wall Coping, 13 in., per ft.	.42	.40	.36	50%*	.35	.28*	.36	.35
(38)	Wall Plaster, neat, in paper, in 80-lb. bags, per ton	22.50	21.50	21.00	20.00	20.00	....	20.00	....
(39)	Wall Plaster, neat, in cloth, 100-lb. incl. sks, per ton	....	23.00‡	23.00‡	23.00	23.00*	18.00*	19.00	22.70
(40)	Wall Plaster, sanded, in cloth, 100-lb. incl. sks, per ton	....	12.00‡	22.00‡	....	23.00	15.00	....	16.00
(41)	Wall Plaster, wood fibre, in cloth, 100-lb. incl. sks, per ton	23.75*	22.50‡	21.00‡	23.00	23.00*	18.50*	20.00	22.70
(42)	Wall Ties, galvanized, per M.	4.75	3.00	3.75	3.50	5.00	3.25	4.50	4.00
(43)	Wall Plugs, per M.	30.00	25.00	25.00	....	10.00	23.00	23.00	....
(44)	Asphalt Shingle (*singles; †stripped), per sq.	7.50†	8.50	7.00	7.00*	8.00*	7.50*	7.50	8.00*
(45)	Roofing Slate Surf. (*heavy, †extra heavy), per sq.	3.50†	3.25*	4.00	3.50*	3.75**	3.00	3.50*	3.25†
(46)	Roofing Smooth Surf. (*light, †medium, §heavy), per sq.	3.40§	3.25§	2.50	3.00§	3.50**	.....	3.50§	3.00§
(47)	Stucco Board, Medium wt., per M. sq. ft.	....	55.00	60.00	60.00	55.00	55.00	....	....
(48)	Stucco Board, Narrow Key, per M. sq. ft.	....	....	60.00	....	....	60.00	....	...
	LUMBER ITEMS								
(49)	Wood Lath, No. 1 (size 4 ft.), per M.	7.50*	11.25	12.00	12.00	12.50*	10.00	9.00	14.00*
(50)	No. 1 Yellow Pine Dimension 12 to 16 ft, per M. Board ft.	47.00	35.00	45.00	47.00	45.00	....	43.00	48.00
(51)	1x10 No. 1 Shiplap, Y. P., all lengths, per M. Board ft.	55.00	55.00	....	60.00	60.00	....	56.00	60.00
(52)	1x10 No. 2 Shiplap, Y. P., all lengths, per M. Board ft.	42.00	40.00	45.00	45.00	40.00	....	42.00	42.00
(53)	1x4 No. 2 Sheathing, per M. Board ft.	40.00	35.00	45.00	40.00	40.00	....	40.00	42.00
(54)	1x4 "B" Flooring, per M. Board ft.	70.00	60.00	75.00*	78.00	65.00	....	75.00	70.00
(55)	Yellow Pine Clear Finish, per M. Board ft.	100.00	125.00	110.00*	90.00	75.00	....	88.00	90.00
(56)	1x6 "B&Btr" Drop Siding, per M. Board ft.	70.00	60.00	....	70.00	65.00	....	65.00	65.00
(57)	1x6 No. 1 Common Drop Siding, per M. Board ft.	65.00	55.00	65.00	60.00	65.00	....	57.00	....
(58)	Cypress Finish Lumber, per M. Board ft.	150.00	150.00	150.00	170.00	135.00	....	165.00	150.00
(59)	¾x4 "B" Partition, per M. Board ft.	85.00	60.00	90.00	70.00	75.00	....	75.00	80.00
(60)	½x4 "B" Ceiling, per M. Board ft.	65.00	55.00	....	60.00	50.00	....	60.00	65.00
(61)	½x5 Clear Rdwd. Bevel Siding, per M. Board ft.	65.00	65.00	60.00	60.00	60.00	....	54.00	75.00
(62)	Mouldings, Yellow Pine, over list	50%	20%	....	25%	.10%	....	25%	....
(63)	Washington 16 in., 5/2 Clears, per M.	6.50	7.00	....	7.00	7.00	....	6.00	....
(64)	Washington 16 in., 5/2 Clears, per sq.	....	....	....	....	....	....	....	....
(65)	Canadian 16 in., 5/2 xxxxx Clears, per M.	7.25	....	....	....	7.00	....	....	7.50
(66)	Canadian 16 in., 5/2 xxxxx Clears, per sq	....	....	7.00	....	....	....	....	....
(67)	1x6 in.-8 in.-10 in.-12 in., No. 1 Com. Yellow Pine Boards, per M.	65.00*	55.00	65.00	65.00	60.00	....	56.00	60.00

††Ft. Wayne—5% discount to contractors and manufacturers for payment on or before 10th of month following purchase, except shingles, roofing and common brick, on which regular 2% discount will be allowed.

*(Above Item 49)—No lumber revisions received for this issue from this city.

‡Means no cloth bags used.

Lime (bulk, Item 1)—Ft. Wayne, price of three 70 lb. sacks; South Bend, 5% discount c. l. only; per bbl., 200 lb., Chicago.

Fire Clay (13)—Returned sacks 15c, South Bend, Bloomington; sacks 25c, Ft. Wayne; paper sacks, Chicago; paper sacks, Terre Haute.

Gravel (14)—Terre Haute, 3000 lb. yd.; Bloomington, 2500 lb. yd.

Mortar Color (22, 23, 24)—Ft. Wayne, in 100 lb. sacks, broken 1c more; Indianapolis, Chicago, 100 lb. lots.

Sand (33, 34)—Terre Haute, 2600 lb. yd.; Bloomington, 2500 lb. yd.; Ft. Wayne, washed.

Wall Coping (36, 37)—Per cent. off list, Terre Haute; Chicago, double slant.

Wall Plaster (38, 39, 40, 41)—Returned sacks, 15c, Bloomington, Chicago; Fort Wayne, paper.

Roofing, Slate Surf. (Item 45)—85 lbs., Bloomington.

Roofing, Smooth Surf. (Item 46)—60 lbs., Bloomington.

(Item 49)—Bloomington, Peoria, cypress; Ft. Wayne, yellow pine; **(Item 54)**—South Bend "B & Btr." **(Item 55)**—South Bend, Rough. **(Item 67)**—Ft. Wayne, $60.00 to $70.00.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

BUILDING SUPPLIES LISTED. NORTH CENTRAL STATES

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A star (★) after city name, denotes no revisions received.

	Green Bay, Wis.	Milwaukee	Minneapolis St. Paul, Minn.	Davenport, Ia.	Des Moines	Sioux City	Kansas City, Mo.	St. Louis, Mo.	Lincoln, †† Neb.	Denver, Colo.
(1) Bulk Lime, per cwt.	$2.00	$1.70	$1.80*	$2.00	....	$1.30*	$1.00	$0.70	....	$1.00*
(2) Barreled Lime, 180 lbs. (net) bbls., per bbl.	....	2.00	2.80*	3.50	$3.14	2.50	2.80	2.50	$2.90	3.10*
(3) Barreled Lime, 260 lbs. (net) bbls., per bbl.	....	....	....	....	....	....	....	....	....	....
(4) Crushed Stone, per ton	2.75	2.70*	....	....	4.50	5.00	....	2.40	3.50*	....
(5) Crushed Stone, per yd.	....	....	....	3.00	....	....	....	3.35	4.73*	....
(6) Common Brick, standard quality and sizes (8x2¼x3¼), per M.	14.00	18.00*	18.00	20.00	22.00	19.50	22.00	17.00*	17.25	14.00
(7) Corner Bead, galvanized, per ft.	.05	.05	.04	.05	.04	.045	.05	.05	.06	.05
(8) Drain Tile, 4 in., per ft.	.04	.06	.07	.07	.11	....	....	.08	.08	.08
(9) Drain Tile, 6 in., per ft.	.055	.08	.09	.11	.15	....	.0625	.14	.10	....
(10) Flue Lining, 8½ in. x 8½ in., per ft.	.33	.30	.35	.35	.40	.35*	.27	.30	.40	....
(11) Flue Lining, 8½ in. x 13 in., per ft.	.495	.45	.50	.50	.575	.52*	.40	.43	.60	....
(12) Fire Brick, Standard 9 in. No. 1 Clay, per M.	55.00*	80.00	65.00	72.00	72.50	70.00*	60.00	60.00	62.50	40.00
(13) Fire Clay, in 100-lb. cloth bags, inc. bags, per ton	15.00*	20.00	12.00	15.00	16.00*	20.00*	12.00	15.00	25.00	10.50
(14) Gravel, washed, per yd.	2.40*	2.40*	2.25	2.10	3.45*	5.00	4.50	2.50*	....	2.00
(15) Hollow Building Tile (8x12x12 in.), per M.	....	....	....	....	....	175.00	....	....	....	....
(16) Hollow Building Tile (8x5x12 in.), per M.	110.00	120.00	100.00	123.00	90.00	100.00	100.00	85.00	73.50	100.00
(17) Hydrated Lime (masons) in 50 lb. paper bags, per bag	.50	.50	.55	.60	.605	.75	.70	.50	.75	.55
(18) Hydrated Lime (finishing) in 50 lb. paper bags, per bag	.75	.60	.75	.65	.78	....	.76	.65	.75	.80
(19) Hair, per bu.	.75	.60	1.00	.75	.60	.75	.35	.65	.75	....
(20) Metal Lath, Expanded, Gauge No. 24, wt. 3.4 lbs. ‡, per yd.	.45	.35	.35	.355	.44	.351	.35	.35	.45	.3875
(21) Metal Lath, Expanded, Gauge No. 25, wt. 3 lbs., per yd.	....	35*	.34	....	....	2885*	.32*	.33	....	.3450*
(22) Mortar Color, red, per lb.	.05	.03	.045	.045*	.045	.03	.025	.023	.04	.0825
(23) Mortar Color, buff, per lb.	.05	.035	.045	.045*	.045	035	.0325	.0325	.045	.05
(24) Mortar Color, double strength black, per lb.	.06	.055	.065	.12	.055	.04	.035	.04	.085	.10
(25) Partition Tile, Clay (3x12x12 in.), per M.	....	115.00	95.00	....	140.00	....	125.00	91.00	....	....
(26) Partition Tile, Clay (4x12x12 in.), per M.	120.00	120.00	105.00	....	150.00	108.00	140.00	97.00	....	....
(27) Partition Tile, Gypsum (3x12x30 in.), per ft.	*	16	.1575	....	.14	.1025	....	.15	.145	.125
(28) Partition Tile, Gypsum (4x12x30 in.), per ft.	*	.18	.1725	....	.17	.1275	....	.185	.165	.15
(29) Portland Cement, 4 sacks to bbl. (excluding sks.), per bbl.	2.80	2.70	2.70	3.10	3.26	3.00	3.20	3.05	3.60	3.80
(30) Extra charge for each cloth sk., per sk.	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
(31) Paving Block, Vitrified (3½x4x8½ in.), per M.	....	....	....	45.00	35.50	....	....	....	....	....
(32) Plaster Board, ⅜ in. thick, per M. sq. ft.	3.50	35.00	37.00	58.00	35.50	36.00	36.50	55.00	35.00	37.25
(33) Sand (Building), per ton	2.40	2.00	....	....	2.75	2.30	....	2.50	1.60	1.60
(34) Sand (Building), per yd.	....	2.30	....	1.50	1.00*	3.10	....	3.37	2.16	1.60
(35) Sewer Pipe, single strength, on list, per cent	47%*	50%*	....	....	....	....	....	35%	....	....
(36) Wall Coping, 9 in., per ft.	.22	.25	.30	.25	.43	.29	.1875	.18	.35	....
(37) Wall Coping, 13 in., per ft.	.33	.35	.40	.34	.59	.39	.255	.27	.45	....
(38) Wall Plaster, neat, in paper, in 80 lb. bags, per ton	20.00	....	....	....	20.80	17.00	....	22.00	17.00	....
(39) Wall Plaster, neat, in cloth, 100 lb. sks., inc. sks., per ton	22.00‡	21.00*	16.00*	22.00*	20.00*	20.50*	21.00*	24.00*	20.00	20.00
(40) Wall Plaster, sanded, in cloth, 100 lb., inc. sks., per ton	22.00‡	14.50*	....	....	....	....	....	....	....	....
(41) Wall Plaster, wood fibre, in cloh, 100 lb., inc. sks., per ton	22.00‡	21.00*	16.50*	....	22.80*	21.00*	....	21.00*	20.50*	....
(42) Wall Ties, galvanized, per M.	5.25	4.00	3.50	7.00	4.25	3.00	3.50	4.50	4.00	6.00
(43) Wall Plugs, per M.	....	....	....	16.50	31.00	20.00	....	16.50	20.00	30.00
(44) Asphalt Shingle (*singles, †stripped), per sq.	6.60*	....	6.50	8.00*	7.50†	8.00†	....	7.50	7.75**	10.50*
(45) Roofing Slate Surf. (*heavy, †extra heavy), per sq.	2.75**	....	3.25	3.50*	3.25*	....	....	....	....	4.00*
(46) Roofing Smooth Surf. (*light, †medium, §heavy), per sq.	2.85§*	....	2.75†	2.85§	2.25§*	....	....	3.50§*	4.00§*	3.50
(47) Stucco Board, Medium wt., per M. sq. ft.	....	55.00	60.00*	65.00	55.00	....	....	....	....	....
(48) Stucco Board, Narrow Key, per M. sq. ft.	....	60.00	60.00*	70.00	55.00	....	....	....	....	....
LUMBER ITEMS										
(49) Wood Lath, No. 1 (size 4 ft.), per M.	12.00	10.00	10.50*	9.00	9.00*	10.00	8.00	7.50	....	9.00
(50) No. 1 Yellow Pine Dimension 12 to 16 ft., per M. Board ft.	48.00	45.00	45.00*	40.00	44 00	40.00*	40.50	40.00	....	36.00*
(51) 1x10 No. 1 Shiplap, Y. P., all lengths, per M. Board ft.	....	50.00	101.00	53.00	60.00	40.00	48.50	45.00	....	52.50
(52) 1x10 No. 2 Shiplap, Y. P., all lengths, per M. Board ft.	38.00	40.00	80.00	40.00	40.00	....	38.50	38.00	....	....
(53) 1x4 No. 2 Sheathing, yer M. Board ft.	....	35 00	73.00*	38.00	40 00	35.00	35.00	30.00	....	41.00
(54) 1x4 "B" Flooring, per M. Board ft.	....	70.00	90.00*	89.00	65 00	90.00*	65.00	52.50	....	75.00
(55) Yellow Pine Clear Finish, per M. Board ft.	80.00	90 00	105.00	88.00	90.00	100.00	80.00	75.00	....	90.00
(56) 1x6 "B&Btr" Drop Siding, per M. Board ft.	....	70.00	72.00*	65.00	65.00	65.00*	55.00	55.00	....	47.00
(57) 1x6 No. 1 Common Drop Siding, per M. Board ft.	....	60.00	93.00	58.00	40 00	....	52.50	48.00	....	....
(58) Cypress Finish Lumber, per M. Board ft.	125.00	130.00	....	165.00	140.00	125.00*	120.00	125 00*	....	....
(59) ¾x4 "B" Partition, per M. Board ft.	65.00	70.00	69.00	80.00	50 00	60.00*	65.00	58.00	....	45.50
(60) ½x4 "B" Ceiling, per M. Board ft.	50.00	65.00	....	60.00*	65.00	50.00	57.50	48.00	....	37.50
(61) ½x5 Clear Rdwd. Bevel Siding, per M. Board ft.	56.00	65.00	65.00	56.00	60.00	60.00	55.00	44.00	....	62.50
(62) Mouldings, Yellow Pine, over list	40%	1.00	50.90	*	25%	25%	25%	....	....	40%
(63) Washington 16 in., 5/2 Clears, per M.	6.00	6.00	6.65	6.50	6.75	6.00	6.00	5.75	....	4.75
(64) Washington 16 in., 5/2 Clears, per sq.	....	5.75	7.25	5.75	....	....	....	....	....	6.00
(65) Canadian 16 in., 5/2 xxxxx Clears, per M.	....	....	....	6.00	7 50	....	....	....	....	6.00
(66) Canadian 16 in., 5/2 xxxxx Clears, per sq.	....	....	....	5.25	....	....	....	....	....	6.00
(67) 1x6 in.-8 in.-10 in.-12 in., No. 1 Com. Yellow Pine Boards, per M.	42.00	50.00	92.00*	56.00	60.00	40.00	47.50	45.00	....	42.00*

*(Above item 49)—No lumber revisions received for this issue from this city.

††Lincoln, all prices less 5 per cent cash 10th of month.

Lime (Item No. 1, bulk)—**Per 80 lb. bu., Denver, Sioux City, hydraulic**; Minneapolis and St. Paul, per 180 lbs. (Barreled, Items 2, 3) **Minneapolis and St. Paul, headed**; Denver, 200 and 400 lbs.

Crushed Stone (4, 5)—Lincoln, 1 in. and chips; Milwaukee, net.

Common Brick (Item 6)—St. Louis, hard common. Milwaukee, another quotes $14.50.

Flue Lining (10, 11)—Sioux City, f. o. b. yard.

Fire Brick (12)—Sioux City, f. o. b. yard; **Green Bay, high grade.**

Fire Clay (13)—Sacks not included, **Des Moines, Sioux City**; 5c, **Green Bay.**

Gravel (14)—Des Moines, 3000 lb. yard; Milwaukee, St. Louis, **Green Bay, per ton.**

Metal Lath (Item 21)—Milwaukee, Gauge No. 27; Denver, **Kansas City, Gauge No. 26**; Sioux City, Gauge 27, 2.3 lbs.

Mortar Color (22, 23, 24)—Davenport, discount in quantities.

Partition Tile, Gypsum (Item 27, 28)—Green Bay, prices quoted at time of delivery.

Sand (34)—Des Moines, 3000 lb. yd.

Sewer Pipe (35)—Milwaukee 3x12 in.; **Green Bay, 3 in. to 24 in. inc.**

Wall Plaster (39, 40, 41)—Returned sacks 15c, Milwaukee, St. Paul, Davenport, Des Moines, Sioux City, St. Louis, Lincoln; sacks, 15c, Kansas City.

Asphalt Shingle (Item 44)—Lincoln, Standard wt.

Roofing, Slate Surf. (Item 45)—85 lbs., Green Bay.

Roofing, Smooth Surf. (Item 46)—60 lbs., Green Bay; 55 lbs., Des Moines, St. Louis, Lincoln.

Stucco Board (Items 48, 49)—Minneapolis and St. Paul, $55.00 to $60.00.

(Item 49)—Minneapolis and St. Paul, No. 2, mixed. Des Moines, fir. **(Item 50)**—Minneapolis and St. Paul, Pine; Sioux City, Fir; Denver, No. 1 Com. Fir; **(Item 53)** Minneapolis and St. Paul, Fir. D. and M.; **(Item 54)**—Sioux City, E. G., Minneapolis and St. Paul, Fir; **(Item 56)**—Sioux City, D. Western Pine, Minneapolis and St. Paul, 2nd cl. Fir; **(Item 58)**—Sioux City, D. Western Fine; St. Louis, $125 to $170; **(Item 59)**—Sioux City, Fir; **(Item 60)**—Davenport, ⅝x4 in.; **(Item 62)**—Davenport, list; **(Item 67)**—Denver, White Pine, Minneapolis and St. Paul, 8 in., $96.00; 10-in., $101.00; 12-in., $106.00.

RETAIL PRICE QUOTATIONS — Published by special arrangement with *Building Supply News*, Chicago

BUILDING SUPPLIES LISTED. WESTERN AND PACIFIC STATES CANADA

All prices are retail, delivered-on-the-job, unless otherwise noted.
An asterisk (*) after a figure, refers to note below.
A star (★) after city name, denotes no revisions received.

		Butte, Mont.	Cheyenne, Wyo.	Los Angeles, Calif.	San Diego	San Francisco	Portland, Ore.	Seattle, Wash.	Winnipeg, Man.	Toronto, Ont.	Halifax, N. S.	★ Quebec
(1)	Bulk Lime, per cwt.	.90	....	$1.10	$1.60	....	*	....	$0.60*	$0.825	$0.75	....
(2)	Barreled Lime, 180 lbs. (net) bbls., per bbl.	....	$3.50	3.00	2.70*	3.25	$3.50	$3.25	3.60	....	3.45*	3.00
(3)	Barreled Lime, 280 lbs. (net) bbls., per bbl.	....	....	....	....	....	....	....	....	....	5.75*	....
(4)	Crushed Stone, per ton	....	....	....	2.12	....	....	....	....	2.445*	.15*	3.45
(5)	Crushed Stone, per yd.	....	2.00*	....	....	....	....	....	4.35	2.1875*	3.30	....
(6)	Common Brick, standard quality and sizes (8x2¼x3¾), per M.	21.00	20.00	....	20.00*	20.00	19.00	16.00	19.00	18.00	20.00	18.00
(7)	Corner Bead, galvanized, per ft.	....	.07	.07	.06	0385	.055	.06	.04	....	.055	.05
(8)	Drain Tile, 4 in., per ft.	....	....	....	.105	.05	.085	.09	.13	.08	....	.065
(9)	Drain Tile, 6 in., per ft.	....	....	.0975*	.14	.065	.09	.15*	.15	.11	....	.115
(10)	Flue Lining, 8½ in. x 8½ in., per ft.	....	....	.3375	.50	.38	.45	.45	.55	.441	.35	....
(11)	Flue Lining, 8½ in. x 13 in., per ft.	....	....	.4875	.72	.55	.65	.65	.75	.63	.55	....
(12)	Fire Brick, Standard 9 in. No. 1 clay, per M.	80.00	80.00	47.50	80.00	70.00	85.00	75.00	90.00	95.00	90.00	88.00
(13)	Fire Clay, in 100-lb. cloth bags, including bags, per ton	20.00	25.00	12.50	35.00*	20.00	22.00	20.00	40.00	22.00	22.00*	22.50
(14)	Gravel, washed, per yd.	3.00	....	....	2.78	1.25	1.35*	....	3.50	1.35	3.75*	1.75
(15)	Hollow Building Tile (8x12x12 in.), per M.	15.00*	....	....	230.00	....	190.00	....	280.00	....	....	....
(16)	Hollow Building Tile (8x5x12 in), per M.	15.00*	....	100.00*	120.00	112.00	100.00	110.00	181.00*	....	....	....
(17)	Hydrated Lime (masons) in 50 lb paper bags, per bag	1.25	.70	1.00*	.85	1.10*	.75*	....	.63	.5563	.75	.72
(18)	Hydrated Lime (finishing) in 50 lb. paper bags, per bag	....	....	.75	.90	....	.65*	24 00	.63	.5813	.80	....
(19)	Hair, per bu.	.75	....	.60	.60*	....	....	....	1.00	....	....	....
(20)	Metal Lath, Expanded, Gauge No. 24, wt. 3.4 lbs ‡, per yd.	....	.45	.40	.44	.35	.45	.42	.41	....	.45	.46*
(21)	Metal Lath, Expanded, Gauge No. 25, wt. 3 lbs., per yd.	....	.42	....	....	.33	.36*	....	....	....	....	....
(22)	Mortar Color, red, per lb.	.06	.07	.07	.05	.075	.12*	.08	.09	.0275	.10	.10
(23)	Mortar Color, buff, per lb.	.07	.08	.07	.05	.075	.09*	.12	.09	....	.10	.10
(24)	Mortar Color, double strength black, per lb.	.07	....	.07	.05	.10	.14*	....	.09	....	....	....
(25)	Partition Tile, Clay (3x12x12 in.), per. M.	15.00*	....	85.00*	120.00	....	....	110.00	181.00	70.00	....	....
(26)	Partition Tile, Clay (4x12x12 in.), per. M	....	....	103.00*	138.00	....	....	120.00	203.00	85.00	.20*	....
(27)	Partition Tile, Gypsum (3x12x30 in.), per ft.	....	....	....	....	....	....	....	.155	....	....	....
(28)	Partition Tile, Gypsum (4x12x30 in.), per ft.	....	....	....	....	....	....	....	.165	....	....	....
(29)	Portland Cement, 4 sacks to bbl., (excluding sks.), per bbl.	3.70	4.60	3.41*	4.12	3.60	3.55	3.65	4.40	4.55	5.40	4.28
(30)	Extra charge for each cloth sk., per sk.	.10	.10	.15	.12	.15	.15	.05	.20	.20	....	.20
(31)	Paving Block, vitrified (3½x4x8½ in.), per M.	....	....	....	55.00	....	65.00	48.00	....	....	....	....
(32)	Plaster Board ⅜ in. thick, per M. sq. ft.	....	40.00*	....	52.50	....	.40*	.35*	56.50	38.75	37.50	46.00
(33)	Sand (building), per ton	....	....	....	1.63	....	....	....	....	1.40*	2.50	2.15
(34)	Sand (building), per yd.	2.50	3.00	....	....	....	1.35	....	3.50	3.50	3.75	....
(35)	Sewer Pipe, single strength, off list, per cent.	....	....	....	*	....	....	....	.35*	37%	....	20%
(36)	Wall Coping, 9 in., per ft.	....	....	....	....	....	....	.20	.35	.3780	....	....
(37)	Wall Coping, 13 in., per ft.	....	....	....	....	....	....	.28	.45	.5670	....	....
(38)	Wall Plaster, neat, in paper, in 80 lb. bags, per ton	....	22.00	....	....	....	....	....	25.50	18.50	....	29.25
(39)	Wall Plaster, neat, in cloth, 100 lb. incl. sks., per ton	21.30	....	24.00*	26.00*	23.50*	22.50	24.00*	28.00*	22.50	....	....
(40)	Wall Plaster, sanded, in cloth, 100 lb. incl. sks., per ton	....	....	....	....	....	....	....	....	14.00	....	....
(41)	Wall Plaster, wood fibre, in cloth, 100 lb. incl. sks., per ton	21.30	....	....	....	....	....	26.00*	28.00*	12.50*	3.15*‡	....
(42)	Wall Ties, galvanized, per M.	....	....	11.50	7.00	6.30	6.50	....	5.00*	....	7.00	4.00
(43)	Wall Plugs, per M.	....	....	....	26.00	26.00	30.00	22.50	23.00	....	20.00	....
(44)	Asphalt Shingle (*singles; †stripped), per sq.	....	....	....	....	....	....	....	10.50	7.80*	....	8.75
(45)	Roofing Slate Surf. (*heavy, †extra heavy), per sq.	....	....	3.50*‡	3.25†*	4.50*‡	3.25*	4.50*	5.10†*	3.50*	....	4.35†
(46)	Roofing Smooth Surf. (*light, †medium, §heavy), per sq.	....	4.00§	3.75§*	3.75§*	3.50§*	3.60§*	3.20§*	4.00§*	3.95§*	5.15§*	3.75§*
(47)	Stucco Board, Medium wt., per M. sq. ft.	....	....	....	....	48.00*	....	45.00	65.00	....	....	....
(48)	Stucco Board, Narrow Key, per M. sq. ft.	....	....	....	....	....	....	....	....	....	....	....
	LUMBER ITEMS						†		†			
(49)	Wood Lath, No. 1 (size 4 ft.), per M.	9.00	12.00	12.50	13.00	7.50	5.50*	5.50	11.00	....	8.00	9.00*
(50)	No. 1 Yellow Pine Dimension 12 to 16 ft., per M. Board ft.	....	40.00*	....	40.00	....	20.00*	21.00*	45.00*	....	....	60.00*
(51)	1x10 No. 1 Shiplap, Y. P., all lengths, per M. Board ft.	....	55.00*	....	48.00	....	22.00	21.00*	48.00*	....	....	60.00*
(52)	1x10 No. 2 Shiplap, Y. P., all lengths, per M. Board ft.	....	....	....	46.00	....	12.00*	17.00*	42.00*	....	....	55.00*
(53)	1x4 No. 2 Sheathing, per M. Board ft.	....	45.00*	....	41.00	....	....	15.50	....	....	....	55.00*
(54)	1x4 "B" Flooring, per M. Board ft.	....	80.00*	....	78.00	....	35.00*	64.00*	84.00*	....	....	50.00*
(55)	Yellow Pine Clear Finish, per M. Board ft.	....	130.00	....	96.00	....	55.00*	60.00*	....	....	....	100.00*
(56)	1x6 "B&Btr" Drop Siding, per M. Board ft.	....	60.00*	....	65.00	....	35.00*	34.00	....	....	....	....
(57)	1x6 No. 1 Common Drop Siding, per M. Board ft.	....	....	....	....	....	....	....	80.00	....	....	....
(58)	Cypress Finish Lumber, per M. Board ft.	....	....	....	....	....	....	....	....	....	....	....
(59)	¾x4 "B" Partition, per M. Board ft.	95.00*	60.00	....	71.00	....	35.00*	36.00	56.00*	....	....	....
(60)	½x4 "B" Ceiling, per M. Board ft.	....	50.00	....	67.00	....	....	30.00	69.00*	....	....	45.00*
(61)	½x5 Clear Rdwd. Bevel Siding, per M. Board ft.	....	75.00	....	54.00	....	....	52.00*	....	....	....	....
(62)	Mouldings, Yellow Pine, over list	....	50%	....	....	....	....	*	....	....	....	....
(63)	Washington 16 in., 5/2 Clears, per M.	5.00	5.50	....	6.40*	....	3.50	3.75	....	....	....	....
(64)	Washington 16 in., 5/2 Clears, per sq.	....	....	....	....	....	....	....	7.50	....	....	....
(65)	Canadian 16 in., 5/2 xxxxx Clears, per M.	....	....	....	....	....	....	....	....	....	....	....
(66)	Canadian 16 in., 5/2 xxxxx Clears, per sq.	....	....	....	....	....	....	....	....	....	....	....
(67)	1x6 in.-8 in.-10 in.-12 in. No. 1 Com. Yellow Pine Boards per M.	....	....	....	43.00	....	25.00*	21.00*	....	....	....	50.00*

*(Above item 49)—No lumber revisions received for this issue from this city.

(‡) means no cloth bags used.

(†) above San Diego lbr. prices means all items are Douglas fir.

(†) above Winnipeg lbr. prices means 15 per cent off.

Lime (Item No. 1, bulk)—Per 70 lb. bu., Winnipeg, Portland, price on dock. **(Barreled,** Items 2, 3), per 200 lb. bbl., San Diego, Halifax, 200 and 400 lbs. **Hydrated** (Items 17, 18)—Ton rate, Portland; Portland, 15c credit for returned sacks (20, 21) (also 10c). Los Angeles, Tiger Brand, fine; San Francisco, per 80 lbs.

Crushed Stone (Items 4, 5)—Toronto, car lot prices. **(Item 4),** under 2 in. **(Item 5), 2 in. and** over. Halifax, per bu. Cheyenne, gravel & sand mixed.

Common Brick (Item 6)—Car lot rate. San Diego.

Drain Tile (Item 8, 9)—Seattle, clay; Los Angeles, f.o.b. factory, cartage extra.

Fire Clay (Item 13)—San Diego, returned sacks, 8c; 15c, **Halifax.**

Gravel (Item 14)—Portland, price on dock; **Halifax,** cu. yd.

Hollow Building Tile (Item 15, 16)—Los Angeles, 5½x8x11½ (Heath); Butte, per ton at yard; Winnipeg, another quotes $155.00.

Hair (19)—Rope fibre used in San Diego, per pkg.

Metal Lath (Item 21)—Portland, Gauge No. 27. Quebec, galvanized.

Mortar Color (Items 22, 23, 24)—Portland, iron oxide.

Partition Tile, Clay (Item 25, 26)—Per sq. ft., Halifax; Los Angeles, f.o.b. factory, cartage extra; Butte, per ton.

Portland Cement (Item 29)—Los Angeles. L. C. L. Delivered.

Plaster Board (Item 32)—Portland, per sq. yd. Cheyenne, sheetrock; Seattle, per yd.

Sand (Item 33)—Toronto, car lots on track.

Sewer Pipe (Item 35)—San Diego, sells at list; Winnipeg, price for 4 in.

Wall Plaster (Items 38, 39, 40, 41)—Sacks, 15c, San Francisco, Winnipeg, **sacks,** 20c, Halifax; sacks, 12c, Los Angeles, San Diego; (Item 48), per bbls., Toronto, Seattle, including sks., 10c each.

Wall Ties (Item 42)—Winnipeg, corrugated.

Roofing Slate Surf. (Item 45)—Los Angeles, 80 lbs.; Seattle, San Francisco, 95 lbs.; San Diego, 55 lbs.; 80 lbs., Winnipeg.

Roofing Smooth Surf. (Item 46)—Toronto, Everlastic; Seattle, Los Angeles, San Diego, Quebec, San Francisco. Winnipeg. 55 lbs.; 80 lbs., Halifax; Portland, best grade.

Stucco Board (Item 47)—San Francisco, button lath, ⅜ in. thick.

(Item 49)—Portland, fir; Quebec, spruce; **(Items 50, 51, 52)**—Quebec, spruce; Cheyenne (50) fir; (51) white pine; Winnipeg, Seattle, fir; (52) Portland, No. 3 Shiplap; **(Item 53)**—Quebec, spruce; Cheyenne, White Pine. **(Item 54)**—Winnipeg, Eg. fir, less 20 per cent.; Portland, fir; Seattle, No. 2; Quebec, spruce; Cheyenne $60.00 & $80.00 fir. **(Item 55)—Seattle,** Portland, fir; Quebec, spruce.

(Item 56)—Winnipeg, Portland, fir; **(Items 59, 60)**—Winnipeg, less 15 per cent.; Portland, fir; Quebec, spruce; Butte, C. Pine. **(Item 61)**—Seattle, cedar; **(Item 62)**—Seattle, list; **(Item 63)** San Diego, 16 in. *A* 6/2; **(Item 67)**—Portland, Seattle, fir; Quebec, spruce.

Selected List of Manufacturers' Literature

FOR THE SERVICE OF ARCHITECTS, ENGINEERS, DECORATORS, AND CONTRACTORS

The publications listed in these columns are the most important of those issued by leading manufacturers identified with the building industry. They may be had without charge, unless otherwise noted, by applying on your business stationery to *The Architectural Forum*, 142 Berkeley St., Boston, Mass., or the manufacturer direct, in which case kindly mention this publication.

Listings in this Department are available to any manufacturer at the rate of $5 per listing per month.

ASBESTOS PRODUCTS

Asbestos Shingle, Slate & Sheathing Co., Ambler, Pa.
- Ambler Asbestos Shingles. Catalog. 5½ x 8½ in. 40 pp. Illustrated.
- Ambler Asbestos Corrugated Roofing and Siding. Catalog. 8½ x 11 in. 36 pp. Illustrated. Standard Purlin Spacing Tables.
- Ambler Asbestos Corrugated Roofing and Siding. Catalog. 8½ x 11 in. 20 pp. Illustrated. Prices and specifications.
- Ambler Asbestos Building Lumber. Catalog. 8½ x 11 in. 32 pp. Illustrated.
- Engineers' Data Sheets. Catalog. 8½ x 11 in. 40 pp. Illustrated. Specifications and working sheets for Ambler Asbestos Corrugated Roofing and Siding.

Johns-Manville, Inc., Madison Ave. & 41st St., New York, N. Y.
- Johns-Manville Asbestos Wood. Booklet. 3½ x 6 in. 32 pp. Illustrated. Prices, construction data. List of uses for asbestos wood.

BALANCES, SASH

Caldwell Mfg. Company, The, Rochester, N. Y.
- Suggestion for the present-day Architect. Booklet. 6 x 9 in. 16 pp. Illustrated. Gives full-size dimensions and information for the purpose of writing specifications for Caldwell Sash Balances.

BOILERS—See Heating Equipment

BRICK

American Face Brick Association, 1151 Westminster Bldg., Chicago, Ill.
- The Story of Brick. Booklet. 7 x 9¼ in. 55 pp. Illustrated. Presents the merits of face brick from structural and artistic standpoints. Tables of comparative costs.
- The Home of Beauty. Booklet. 8 x 10 in. 72 pp. Color plates. Presents fifty designs for small face brick houses submitted in national competition by architects. Text by Aymar Embury II, Architect. Price 50c.
- A Manual of Face-Brick Construction. Booklet. 8½ x 11 in. Textbook on construction of the brick wall and various uses of face brick. 31 colored plates of brick houses with plans. Price, $1.00.

Bradford Brick Co., 2 Main Street, Bradford, Pa.
- "Red" Catalog. 7¼ x 5 in. 30 pp. Illustrated. Covers dry pressed and impervious smooth-faced brick.

Common Brick Manufacturers Association of America, 1309 Schofield Bldg., Cleveland, Ohio.
- Brick for the Average Man's Home. Book. 8½ x 11 in. 72 pp. Color plates. Book of plans for bungalows, houses and apartments for which working drawings are available. Price $1.00.
- Brick—How to Build and Estimate. Book. 8½ x 11 in. 48 pp. Illustrated. A manual for the brick builder on estimating and details of brick construction. Price 25c.

BUILDING STONE—See Stone, Building

CEMENT

Alpha Portland Cement Company, Easton, Pa.
- Alpha Cement—How to Use It. Handbook 6 x 9 in. 96 pp. Illustrated. A practical handbook on popular forms of concrete construction, including form work, proper proportions in mixing, waterproofing, colored concrete, etc.
- Alpha Service Sheets & Bulletins. Special suggestions on the construction of Industrial Housing, Garages, Inclosure Walls, Steps, Sidewalks, Barns, Silos, Farm Buildings, etc.
- Alpha Aids. A bi-monthly magazine for those who buy, sell or use Portland Cement, sent complimentary to approved names.

Carney's Cement Company, Mankato, Minn. Booklet. 8 x 10 in. 20 pp. Illustrated. Complete information on product, showing prominent buildings in which this cement has been used.

CONDUIT

National Metal Molding Co., 1113 Fulton Building, Pittsburgh, Pa.
- Bulletin of all National Metal Molding Products. In correspondence folder. 9½ x 11½ in.
- Sherarduct. Circular. 5 x 8 in. Illustrated.
- Flexsteel. Circular. 5 x 8 in. Illustrated.

CONSTRUCTION, FIREPROOF

Bostwick Steel Lath Co., The, Niles, Ohio.
- After The Fire. Booklet. 6 x 9 in. 13 pp. Illustrated. Showing the fire-resistance of Bostwick "Truss-Loop."

National Fire Proofing Co., 250 Federal St., Pittsburgh, Pa.
- Standard Fire Proofing Bulletin 171. 8½ x 11 in. 32 pp. Illustrated. A treatise on fire proof floor construction.

Northwestern Expanded Metal Co., 934 Old Colony Building, Chicago, Ill.
- Fireproof Construction. Catalog. 6 x 9 in. 72 pp. Illustrated. Handbook of practical suggestions for architects and contractors. Describing Nemco Expanded Metal Lath.
- Fire-proof Construction. Handbook. 6 x 9 in. 72 pp. Illustrated. Describing Kno-Burn expanded metal lath.

DAMPPROOFING

Truscon Laboratories, The, Caniff Avenue and Grand Trunk R. R., Detroit, Mich.
- Truscon Plaster Bond—Foundation Coat—Stone Backing. Booklet. 5 x 8 in. 16 pp. Illustrated.
- A pamphlet on Dampproofing interior walls and exterior walls under earth filling.

DECORATIVE FABRICS

M. H. Rogers, Inc., 912 Broadway, New York, N. Y.
- Samples of the following materials will be sent to architects upon request, to meet specific requirements:
  Tapestries, velours, damasks, armures, cretonnes, tapestry panels, needlepoints, chair and sofa seats and backs.

DOORS, WINDOWS AND TRIM, METAL

Dahlstrom Metallic Door Company, 425 Buffalo Street, Jamestown, N. Y.
- Architectural Catalog. 10 x 14 in. 46 pp. 11 sections. Illustrated. Catalog showing our regular styles and types of hollow metal doors and interior trim. Various types of frames and other architectural shapes also illustrated.
- Architectural Portfolio. 14 x 18 in. 30 pp. Illustrated. Portfolio of various designs and types of Dahlstrom doors. Drawings and details of each style or type. This is only sent free to reliable architects.

David Lupton's Sons Company, Witte & Tulip Sts., Philadelphia, Pa.
- Catalog 10-LSS. 24 pp. Illustrated. 8½ x 11 in. Describing Lupton Pivoted Factory Steel Sash. Section drawings, different head and sill conditions and rules for ordering.
- Catalog 10-PCS. 8½ x 11 in. 44 pp. Illustrated. Describing Pond Continuous Sash for side-walls, monitors and saw-tooth roofs.
- Air and Light in Machine Shops. Catalog. 6 x 9 in. 42 pp. Illustrated. Showing the proper application of sash to machine shops.
- Air and Light in Foundries and Forge Shops. Catalog. 6 x 9 in. 48 pp. Illustrated. Describing sash types for heat-producing buildings where unusual ventilation and daylighting are required.

Truscon Steel Company, Youngstown, Ohio
- Truscon Steel Windows. Catalog. 8½ x 11 in. 80 pp. Illustrated. Describing steel windows for industrial and commercial buildings.

DUMBWAITERS

Kaestner & Hecht Co., Chicago, Ill.
- Bulletin 520. Describes K. & H. Co. electric dumbwaiters. 8 pp.

Sedgwick Machine Works, 151 West 15th Street, New York.
- Catalog and Service Sheets. Standard specifications, plans and prices for various types, etc. 4¼ x 8¼ in. 60 pp. Illustrated.

ELECTRICAL EQUIPMENT

Electric Boiler Corporation, Cambridge, Mass.
- Electric Boilerette. Booklet. 5 x 7 in. 18 pp. Illustrated. Describing an electrically-heated and automatically-controlled water-boiler for homes, offices, barber-shops, etc. Made in sizes from five to one hundred gallons capacity.

Frink, I. P., Inc., 24th Street and 10th Avenue, New York, N. Y.
- Catalog 415. 8½ x 11 in. 46 pp. Photographs and scaled cross sections. Specialized bank lighting, screen and partition reflectors, double and single desk reflectors and Polaralite Signs.

Harvey Hubbell, Inc., State and Bostwick Sts., Bridgeport, Conn.
- For Milady's Convenience. Booklet. 5 x 7 in. 18 pp. Illustrated. Booklet illustrating the use of electric current outlets in the home.
- Electric Wiring Devices. Catalog. 8 x 10½ in. 126 pp. Illustrated. Covering the complete line.

Habirshaw Electric Cable Company, Inc., Yonkers, N. Y.
- Plans and Specifications for the Home Electrical. Catalog. 11 x 14 in. 20 pp. Rubber, oiled paper, varnished cambric insulated wires and cables for every condition of service.

Kohler Co., Kohler, Wis.
- Kohler Automatic Power and Light 110 Volt D. C. Booklet. 5 x 7 in. 32 pp. Illustrated. Describes a standard voltage automatic, electric power and light plant for isolated homes.

Adam Electric Company, Frank, 3650 Windsor Pl., St. Louis, Mo.
- The Answer to the Tenant Meter Problem. Booklet 6 x 9 in. 8 pp. Illustrated. Describing the Frank Adam Meter Control Panel Boards and Cabinets which are designed especially for the increase or the decrease of the tenants' requirements in the building.
- The Floor-Box With the Reversible Cover. Circular 3¼ x 6¼ in. 8 pp. Illustrated.
- Frank Adam Hanger Outlets. Circular 3½ x 6¼ in. Illustrated.

Simplex Wire & Cable Co., 201 Devonshire Street, Boston, Mass.
- Simplex Manual Catalog and reference book. 6¾ x 4¼ in. 92 pp. Contains in addition to information regarding Simplex products, tables and data for the ready reference of architects, electrical engineers and contractors.

ELEVATORS

Kaestner & Hecht Co., Chicago, Ill.
- Bulletin 500. Contains 32 pp. Giving general information on passenger elevators for high buildings.

Otis Elevator Company, 11th Ave. & 26th Street, New York, N. Y.
- Otis Push Button Controlled Elevators. Booklet. 6 x 9 in. 56 pp. Illustrated. Detailed description of Otis Push Button Elevators. Their uses in residences, stores, institutions, apartment houses, business offices and banks, etc.
- Otis Gravity Spiral Conveyors. Booklet. 6 x 9 in. 56 pp. Illustrated. Gravity spiral conveyors for lowering packaged merchandise, boxed, cased and bundled goods in factories, warehouses, terminal buildings, etc.
- Otis Electric Traction Elevators. Booklet. 9 x 12 in. 28 pp. Illustrated. Full details and illustrations of Otis geared and gearless traction elevators for all types of buildings.
- Otis Escalators. Booklet. 6 x 9 in. 36 pp. Illustrated. Description of step and cleat type single and double file escalators (moving stairways).

Sedgwick Machine Works, 151 West 15th Street, New York.
- Catalog and descriptive pamphlets. 4¼ x 8¼ in. 70 pp. Illustrated. Descriptive pamphlets on hand power freight elevators, sidewalk elevators, automobile elevators, etc.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS — *Continued from page 84*

FENCES

American Fence Construction Co., 106 Church Street, New York.
Afco Factory Fences. Booklet. 9 x 12 in. 32 pp. Illustrated.
Residential Fences. Booklets. 7 x 2½ in. Illustrated. A series of booklets on residential fences consisting of photographs and brief descriptions.

Anchor Post Iron Works, 165 Broadway, New York, N. Y.
Catalog 51. 8½ x 11 in. 53 pp. Illustrated. Anchor Post Fences for Country Place, Factory or Farm.
Catalog 54. 8½ x 11 in. 24 pp. Illustrated. Factory Fences.

FIRE DOORS—See Doors, Windows and Trim, Metal

FIREPLACE EQUIPMENT

Covert Co., H. W., 137 E. 46th Street, New York, N. Y.
Hints on Fireplace Construction. Catalog. 5½ x 8½ in. 11 pp. Illustrated.
Diagrams of construction and installation of Covert "Improved" and "Old Style" Dampers and Smoke Chambers.

FLOORING

Armstrong Cork & Insulation Co., 132 24th Street, Pittsburgh, Pa.
Linotile Floors. Catalog. 6 x 9 in. 40 pp. Color plates. Describes Linotile, a composition of ground cork, wood flour, linseed oil and various gums and pigments in tile form.
Armstrong's Cork Tile. Booklet. 5 x 7 in. 16 pp. Illustrated in color.

Armstrong Cork Co. (Linoleum Dept.), Lancaster, Pa.
Armstong's Linoleum Floors. Catalog. 8½ x 11 in. 54 pp. Color plates. A technical treatise on linoleum, including tables and specifications for installing linoleum floors.
Speaking of Floors. Booklet. 11¼ x 15 in. 16 pp. Color plates.
Armstrong's Linoleum Pattern Book, 1921. Catalog. 3½ x 6 in. 176 pp. Color plates. Reproductions in color of all patterns of linoleum and cork carpet in the Armstrong line.
Quality Sample Book. Three books. 3½ x 5¾ in. Showing all grades and thicknesses in the Armstrong line of linoleum and cork carpets.

Muller Co., Franklyn R., Waukegan, Ill.
Asbestone Composition Flooring. Circulars. 8½ x 11 in. Description and Specifications.

Oak Flooring Manufacturers Association, 1014 Ashland Block, Chicago, Ill.
Modern Oak Floors. Booklet. 6¼ x 9¼ in. 24 pp. Illustrated. A general book that tells the complete story on Oak Flooring.
Oak Flooring, How and When to Use it. Booklet. 3½ x 6¼ in. 16 pp. Illustrated. A small, technical book showing the general rules, standard thickness and widths, how to lay, finish and care for oak floors.

FLOOR HARDENERS

General Chemical Company, The, 25 Broad Street, New York, N. Y.
Hard-N-Tyte for concrete and mortars. Booklet. 3½ x 8½ in. 8 pp. Illustrated. Describes use of Hard-N-Tyte as application for hardening concrete floors.

Sonneborn Sons, Inc., L., 266 Pearl Street, New York.
Concrete and Lapidolith. Booklet. 5¾ x 8¼ in. 24 pp. Illustrated. Describing relation of Lapidolith chemical floor hardener to concrete construction.
Why Lapidolize? Booklet. 8½ x 11 in. 11 pp. Illustrated. Reasons why Lapidolith should be specified.
Lapidolith Specifications. Circular. 8½ x 10¾ in. 2 pp.

Truscon Laboratories, The, Cor. Caniff Avenue and Grand Trunk R. R., Detroit, Mich.
Agatex and Its Performances. Booklet. 8½ x 11 in. Describes the methods of hardening concrete floors by the application of a chemical which forms a new surface as hard as agate.

FURNACES—See Heating Equipment

FURNITURE

Estey Organ Company, Brattleboro, Vt.
Pipe Organs. Complete specifications and full information furnished to the architect for pipe organ to be installed in any given residence, upon receipt of plans and other particulars.

Leavens Co., Inc., The William, 32 Canal Street, Boston, Mass.
Catalog. 7 x 9 in. 200 loose leaved pp. Illustrated with wood cuts.

GARAGE CONSTRUCTION

Ramp Buildings Corporation, 115 Broad Street, New York, N. Y.
The d'Humy Motoramp System of Building Design. Booklet. 8½ x 11 in. 20 pp. Illustrated. Describing the d'Humy system of ramp construction for garages, service buildings, factories, warehouses, etc., where it is desirable to drive automobiles and motor trucks or industrial tractors under their own power from floor to floor.

GLASS CONSTRUCTION

King Construction Company, N. Tonawanda, N. Y.
Catalog No. 52. 9 x 11 in. 45 pp. Illustrated. Illustrating and describing greenhouses erected for private estates and public parks.

Mississippi Wire Glass, 220 Fifth Avenue, New York.
Mississippi Wire Glass. Catalog. 3¼ x 8½ in. 32 pp. Illustrated Covers the complete line.

GRANITE—See Stone, Building

HARDWARE

Cutler Mail Chute Company, Rochester, N. Y.
Cutler Mail Chute Model F. Booklet. 4 x 9¼ in. 8 pp. Illustrated.

McKinney Mfg. Co., Pittsburgh, Pa.
McKinney Cabinet Hardware. Catalog. 6 x 9 in. 32 pp. Illustrated. Describes complete line of hardware for cabinet and furniture work.
McKinney Hardware for Sliding Doors. Booklet. 6 x 9 in. 18 pp. Illustrated. Describes different types of sliding door hardware.

HARDWARE—Continued

Stanley Works, The, New Britain, Conn.
Wrought Hardware. Catalog. BJ10. 6½ x 10 in. Color plates. Shows all of the Stanley Works products made of steel from their own mills.
Eight Garages and their Stanley Garage Hardware. Booklet. 5 x 6¾ in. 32 pp. Illustrated. Illustrations and floor plans of eight typical garages that have been correctly equipped with Stanley Garage Hardware.
Ball Bearing Butts. Booklet. BS. 5 x 7¼ in. 32 pp. Illustrated. Concise description of various butts manufactured.
Stanley Specially Designed Garage Hardware. Booklet. B-50. 6 x 9 in. 24 pp. Illustrated. Detailed pictures and descriptions of various garage hardware equipment.

Vonnegut Hardware Co., Indianapolis, Ind.
Von Duprin Self-Releasing Fire Exit Devices. Catalog. 12F 8 x 11 in. 41 pp. Illustrated.
"Saving Lives." Booklet. 3¼ x 6 in. 16 pp. Illustrated. A brief outline why Self-Releasing Fire Exit Devices should be used.

HEATING EQUIPMENT

American Radiator Co., 816 South Michigan Avenue, Chicago, Ill.
Engineers' Data Book. 8 x 10¾ in. 48 pp. Illustrated. Valuable engineering data for estimating heating and ventilating requirements.
Ventilation for Vento Heaters. Catalog. 8 x 10¾ in. 24 pp. Illustrated. Examples of installation.

James B. Clow & Sons, 534 S. Franklin Street, Chicago, Ill.
Gasteam. Catalog. 6 x 9 in. 16 pp. Illustrated. New radiator using gas for fuel.

Gorton & Lidgerwood Co., 96 Liberty Street, New York, N. Y.
Gorton Self-Feeding Boilers. Booklet. 4¼x7¼ in. 32 pp. Illustrated, Descriptions, specifications, and prices.

Hess Warming & Ventilating Co., 1205D Tacoma Bldg., Chicago, Ill.
Modern Furnace Heating. Catalog. 6 x 9 in. 48 pp. Illustrated. Complete information on hot-air furnace heating useful to the architect and contractor regardless of what make of furnace he uses.

Kelsey Heating Company, James St., Syracuse, N. Y.
Booklet No. 5. 4 x 9 in. 32 pp. Illustrated. A dealers' booklet showing the Kelsey Warm Air Generator Method of warming and distributing air. Gives dimensions, heating capacities, weights, kind of coal recommended, and shows the mechanical and gravity system of heating homes, churches and schools.
Monroe Pipeless Booklet. 4½ x 8 in. 20 pp. Illustrated.
Monroe Tubular Heater. Booklet. 4½ x 8 in. 20 pp. Illustrated. General Booklet giving capacities, dimensions, weights, etc.
Syracuse Pipeless Booklet. 4½ x 8 in. 12 pp. Illustrated. General Booklet, giving sizes and capacities.

Kewanee Boiler Co., Kewanee, Ill.
Kewanee on the Job. Catalog. 8½ x 11 in. 80 pp. Illustrated. Showing installations of Kewanee boilers, water heaters, radiators, etc.
Catalog No. 73. 6 x 9 in. 35 pp. Illustrated. Describes Kewanee steel power boilers with complete specifications.
Catalog No. 74. 6 x 9 in. 35 pp. Illustrated. Describes Kewanee steel heating boilers with specifications.
Catalog No. 75. 8½ x 11 in. 6 pp. Illustrated. Specifications on Tabasco Water Heaters, Kewanee water heating garbage burners and Kewanee steel tanks.

Minneapolis Heat Regulator Company, Minneapolis, Minn.
The Heart of the Heating Plant. Catalog. 6 x 9 in. 20 pp. Illustrated. Describing the Minneapolis Heat Regulator, its construction, application and operation for the automatic control of temperature where coal, gas, fuel oil or street steam is used.

Page Boiler Company, The Wm. H., 141 West 36th Street, New York, N. Y.
Page Boilers. Catalog. 4½ x 8 in. 84 pp. Illustrated. Descriptions with specifications of the Volunteer Round and Monarch Square Sectional Boilers; also the Monarch Down-Draft Smokeless Boiler; with method for apportioning size of boiler and radiation, and other heating data.

Smith Co., H. B., 57 Main Street, Westfield, Mass.
General Boiler and Radiator Catalog. 4 x 7 in. 90 pp. Illustrated. Giving ratings, dimensions, capacities and working pressures.
Engineer's Data Ring Book. 4 x 7 in. 125 pp. Illustrated.
Architect's and Contractor's Binders. These binders are made up of 9½ x 11 in. folders of different kinds giving dimensions, price lists, and erecting directions on the different lines of our manufacture.

United States Radiator Corporation, Detroit, Mich.
The Complete Line. Catalog. 4¼ x 7¼ in. 255 pp. Illustrated. Contains important technical information of special interest to architects and heating engineers.
Capitol Smokeless Type Boilers. Booklet. 8½ x 11 in. 12 pp. Illustrated. Describing a new type of low-pressure heating boiler which burns soft coal without smoke.

Warren Webster & Co., Camden, N. J.
Webster Vacuum System of Steam Heating. Catalog. 8 x 10½ in. 36 pp. Illustrated. Describing the Webster Vacuum System of Steam Heating, its principles of operation, and advantages of installation.
Webster Feed-Water Heaters. Catalog. 8 x 10½ in. 28 pp. Illustrated. Describing the construction and operation of the Webster Feed-Water Heaters for steam-heating systems, power plants and industrial plants of every type.

HEAT REGULATORS—See Heating Equipment

HOISTS

Gillis & Geoghegan, 544 West Broadway, New York.
Hoists for Industrial Plants. Booklet. 6 x 8¾ in. 8 pp. Illustrated. Labor saving service in the lifting or lowering of lighter loads, through the use of G. & G. Telescopic and Non-telescopic Hoists.
Removing Ashes. Booklet. 6 x 8¾ in. 6 pp. Illustrated. Removing ashes from boiler room directly to wagon by electrically operated Telescopic Hoists.

HOLLOW TILE—See Tile, Hollow

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS — *Continued from page 85*

INSULATION

Bishopric Mfg. Company, 103 Este Avenue, Cincinnati, Ohio.
Homes Built on the Wisdom of Ages. Catalog. 6 x 9 in. 48 pp. Illustrated. Describing the use of Bishopric Stucco-Board and Bishopric Sheathing Board.

Johns-Manville, Inc., Madison Ave. & 41st St., New York, N. Y.
Business Noise, Its Cost and Prevention. Booklet. 6 x 9¼ in. 16 pp. Illustrated. Data on correction of acoustics in offices, theaters, churches, etc.

Philip Carey Co., The, Cincinnati, Ohio.
Carey Asbestos and Magnesia Products. Catalog. 6 x 9 in. 72 pp. Illustrated.

JOISTS AND STUDS, PRESSED STEEL

Truscon Steel Company, Youngstown, Ohio
Truscon Structural Pressed Steel. Catalog. 8½ x 11 in. 24 pp. Illustrated. Information on Pressed Steel Beams and Joists for light occupancy buildings. Tables, specifications and views of installations.

LATH, METAL AND REINFORCING

The Bostwick Steel Lath Co., Niles, Ohio.
Bostwick Steel Lath, Revised Edition 1920. Catalog. 9 x 11½ in. 28 pp. Illustrated. Covers the entire line. Drawings and Specifications.

Corrugated Bar Company, Inc., Buffalo, N. Y.
Corr-Mesh. Catalog. 6 x 9 in. Illustrated. Describes the characteristics of Corr-Mesh, a ribbed expanded metal used in concrete and stucco construction.
Corr-Plate. Catalog. 6 x 9 in. 63 pp. Illustrated. Describes a type of girderless floor construction in which the reinforcing bars are laid in two directions only.

North Western Expanded Metal Co., 934 Old Colony Building, Chicago, Ill.
Designing Data. Catalog. 6 x 9 in. 94 pp. Illustrated. Describes most efficient use of Econo Expanded Metal Reinforcing.
Formless Concrete Construction. Catalog. 6 x 9 in. 80 pp. Illustrated. Describes use of T-Rib Chanelath, a form and reinforcing for concrete.

Truscon Steel Co., Youngstown, Ohio.
Hy-Rib and Metal Lath. 18th ed. Catalog. 8½ x 11 in. 64 pp. Illustrated. Gives properties of laths, specifications, special uses and views of installations.

LUMBER

Arkansas Soft Pine Bureau, 802 Boyle Bldg., Little Rock, Ark.
Arkansas Soft Pine Handbook. Catalog. 8½ x 11¼ in. 62 pp. Illustrated. Concise, technical information regarding physical character, uses, and including Grading Rules and Standard Molding Designs.
The Home You Long For. Booklet. 8¼ x 11 in. 32 pp. Illustrated. Folio intended for the layman. Contains 18 homes by Robert Sayfarth, Architect, Chicago. Of general interest to architects, but does not contain technical information.

California Redwood Assn., 206 Marvin Bldg., San Francisco, Calif.
California Redwood Homes. Booklet. 6 x 9 in. 16 pp. Illustrated. Describes the use of Redwood Lumber for various places and conditions in the building of the home.

Long Bell Lumber Co., R. A. Long Building, Kansas City, Mo.
The Post Everlasting. Booklet. 10½ x 7½ in. 32 pp. Illustrated. Information regarding creosoted yellow pine fence posts, barn poles, paving blocks, etc.
Poles That Resist Decay. Booklet. 9¼ x 4 in. 16 pp. Illustrated. Poles for telegraph, telephone, high power transmission lines.

Pacific Lumber Company of Illinois, The, 1105 Lumber Exchange Bldg., Chicago.
Engineering Digest. Redwood Information Sheets. 1. General Data Sheet on Redwood, its Production and Uses. 2. Tanks and Vats for Water, Acid and Alkali Solutions and Oil. 3. Pipe for Water, Chemicals and Sewage Conveying. 6. Farm and Dairy Buildings and Equipment, Silos, Tanks, Pipe, Outbuildings, Irrigation Flumes, Drainage Boxes, Greenhouses, Etc. 9. Railroad Construction and Equipment. 10. Industrial Building Materials. 11. Residential Building Materials.

METAL LATH—See Lath, Metal and Reinforcing

METALS

American Brass Co., Waterbury, Conn.
Illustrated Pamphlets. 8½ x 11 in. Describes the use and adaptability of Extruded Architectural Shapes, Benedict Nickel, Die Pressed Metals, Condenser Tubes, Brass and Copper Pipe and Commutator Copper.

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.
Reference Book. Pocket Ed. 2½ x 4½ in. 168 pp. Illustrated. Covers the complete line of Sheet and Tin Mill Products.
Copper—Its Effect Upon Steel for Roofing Tin. Catalog. 8½ x 11 in. 28 pp. Illustrated. Describes the merits of high grade roofing tin plates and the advantages of the copper-steel alloy.
Apollo and Apollo-Keystone Galvanized Sheets. Catalog. 8½ x 11 in. 20 pp. Illustrated.
Research on the Corrosion Resistance of Copper Steel. Booklet. 8½ x 11 in. 24 pp. Illustrated. Technical information on results of atmospheric corrosion tests of various sheets under actual weather conditions.
Facts Simply and Briefly Told. Booklet. 8½ x 11 in. 16 pp. Illustrated. Non-technical statements relating to Keystone Copper Steel.
Black Sheets and Special Sheets. Catalog. 8½ x 11 in. 28 pp. Illustrated. Describes standard grades of Black and Uncoated Sheets, together with weights, bundling tables, etc.
Bright Tin Plates. Catalog. 8½ x 11 in. 16 pp.

METAL TRIM—See Doors, Windows and Trim, Metal

MORTAR COLORS

Clinton Metallic Paint Co., Clinton, N. Y.
Clinton Mortar Colors. Booklet. 3½ x 6¾ in. 8 pp. Illustrated. Complete description of Clinton Mortar Colors with color samples.

OFFICE SUPPLIES

Dixon Crucible Co., Joseph, Pencil Dept., 224 J. Jersey City, N. J.
Finding Your Pencil. Booklet. 6¼ x 3¼ in. 16 pp. Illustrated.
The First Five. Booklet. 3½ x 5¼ in. 10 pp. Illustrated.
A Study in Sepia. Booklet. 7 x 4½ in. 5 pp. Illustrated.

PAINTS, STAINS, VARNISHES AND WOOD FINISHES

Berry Brothers, Detroit, Michigan.
"Natural Woods and How to Finish Them." Booklet. 6½ x 4¾ in. 95 pp. Containing technical information and advice concerning wood finishing.
"Beautiful Homes." Booklet. 8½ x 6½ in. 26 pp. Illustrated in colors. Giving information to home builders and others on interior finishing.

Bird & Company, J. A. & W., 88 Pearl St., Boston, Mass.
Ripolin Specifications. Booklet. 8 x 10½ in. 12 pp. Description. Contains twenty-one carefully prepared specifications for undercoats for different types of work.

Boston Varnish Co., Everett Station, Boston, Mass.
The Inviting Home. Booklet. 5½ x 9 in. 16 pp. Color Plates. A briefly worded book on painting for the busy architect or decorator.
The White Enamel Specification Book. 6 x 9 in. 12 pp. Explaining the use of Kyanize White Enamel on interior or exterior surfaces.

Cabot, Inc., Samuel, Boston, Mass.
Cabot's Creosote Stains. Booklet. 4 x 8½ in. 16 pp. Illustrated.

Fox Co., M. Ewing, New York, N. Y.
Calcimines. Booklet. 3¼ x 6¼ in. 8 pp. Color cards.

S. C. Johnson & Son, Racine, Wis.
The Proper Treatment for Floors, Woodwork & Furniture. Booklet. 6¼ x 8¾ in. 32 pp. Illustrated in color. A treatise on finishing hard and soft wood in stained and enameled effects; also natural wood effects.
Portfolio of Wood Panels. 5½ x 10¾ in. 14 pp. A portfolio containing actual panels of finished woods. Also contains valuable information on finishing and re-finishing floors and woodwork.

O'Brien Varnish Co., 1121 Washington Avenue, South Bend, Ind.
That Magic Thing Called Color. Booklet. 5½ x 8½ in. 24 pp. Illustrated. Short treatise on the use of color in the home, special reference to walls and ceilings.
Architects' Specification Manual. 8½ x 11 in. 50 pp. Complete specifications for all paint products.

Ruberoid Co., The (formerly the Standard Paint Co.), 95 Madison Avenue, New York, N. Y.
Preservative Coatings. Booklet. 6 x 9 in. 15 pp. Illustrated. Presents in a concise manner the properties and uses of the Standard Paint Company's various paint preparations.

The Sherwin-Williams Co., 882 Canal Road, Cleveland, Ohio.
A Book of Painting and Varnishing Specifications. 8½ x 11 in. 30 pp. A text book on painting and finishing.
Announcement of Sherwin-Williams Flat-Tone Multi-Color Effects. Booklet. 2½ x 6 in. 10 pp. Illustrated. Development of a new system of wall decoration.
Monthly Architectural Bulletin. 8½ x 11 in. Bulletin issued periodically on painting and finishing.

Smith & Co., Edward, P. O. Box 76, City Hall Station, New York, N. Y.
Architect's Hand Book. 4¾ x 7½ in. 24 pp. Specifications and suggestions for painting, varnishing, enameling, etc.

Sonneborn Sons, Inc., L., Dept. 4, 264 Pearl Street, New York.
Paint Specifications. Booklet. 8½ x 10¾ in. 4 pp.

Truscon Laboratories, The, Cor. Caniff Avenue and Grand Trunk R. R., Detroit, Mich.
Spread the Sunshine Inside. Booklet. 5 x 8 in. 24 pp. Describes methods for light saving by the application of light reflecting enamels to interior walls of factories and workrooms.

Wadsworth-Howland Co., Inc., Boston, Mass.
Paints and Varnishes. Catalog. 5¾ x 8½ in. 140 pp. Illustrated. Covers the complete line.

PIPE

Clow & Sons, James B., 534 S. Franklin Street, Chicago, Ill.
Catalog "A." 4 x 6½ in. 706 pp. Illustrated. Shows a full line of steam, gas and water works supplies.

National Tube Co., Frick Building, Pittsburgh, Pa.
National Bulletin No. 11, History, Characteristics and Advantages of National Pipe. Catalog. 8½ x 11 in. 48 pp. Illustrated.

PLUMBING EQUIPMENT

Brunswick-Balke-Collender Co., 623 S. Wabash Avenue, Chicago, Ill.
Whale-bone-ite Seat. Booklet. 3½ x 6¼ in. 4 pp. Illustrated.
Whale-bone-ite Seat. Booklet. 3½ x 6¼ in. 8 pp. Illustrated.

Clow & Sons, James B., 534 S. Franklin Street, Chicago, Ill.
Catalog "M." 9¼ x 12 in. 184 pp. Illustrated. Shows complete line of plumbing fixtures for Schools, Railroads and Industrial Plants.

Crane Company, 836 S. Michigan Avenue, Chicago, Ill.
Crane Products in World Wide Use. Catalog. 5 x 9½ in. 24 pp. Illustrated.
Plumbing Suggestions for Home Builders. Catalog. 3 x 6 in. 80 pp. Illustrated.
Plumbing Suggestions for Industrial Plants. Catalog. 4 x 6½ in. 43 pp. Illustrated.

Hess Warming & Ventilating Co., 1205D Tacoma Bldg., Chicago, Ill.
Hess Sanitary Steel Medicine Cabinets. Booklet. 4 x 6 in. 16 pp. Illustrated.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS — *Continued from page 86*

PLUMBING EQUIPMENT — Continued

Kohler Co., Kohler, Wis.
Kohler of Kohler. 5½ x 8 in. 48 pp. Illustrated catalog. Shows complete line of plumbing fixtures.
Kohler Architect Specification Forms. 8½ x 11 in. Loose leaf portfolios intended to cover individual specifications. Separate illustrations and specification sheets provided.

Maddock's Sons Co., Thomas, Trenton, N. J.
Highest Grade Standardized Plumbing Fixtures for Every Need. Catalog. 5 x 7½ in. 94 pp. Illustrated. Covers the complete line.
Bathroom Individuality. Booklet. 6 x 9 in. 28 pp. Illustrated. Showing view of complete bathrooms with complete descriptions of floor plans.
Specifications for plumbing fixtures. Booklet. 9 x 12 in. 8 pp. Tables of specifications for industrial buildings, schools, apartments, hotels, etc.

Speakman Company, Wilmington, Del.
Speakman Showers and Fixtures. Catalog. 4½ x 7½ in. 250 pp. Illustrated. Catalog of Modern Showers and Brass Plumbing Fixtures, with drawings showing layouts, measurements, etc.
Toned Up In Ten Minutes. Booklet. 7½ x 10½ in. 16 pp. Illustrated. Modern Showers and Washups for Industrial Plants, showing the sanitary method of washing in running water.

PUMPS

Goulds Mfg. Co., The, Seneca Falls, N. Y.
Set of Twenty Bulletins. 7½ x 10½ in. 12 to 32 pp. each. Illustrated. Covers complete line of power and centrifugal pumps for all services.
Catalog "K." 6 x 9 in. 216 pp. Illustrated. Covers complete line of smaller size pumps.

ROOFING

Creo-Dipt Company, 1025 Oliver St., North Tonawanda, N. Y.
Architectural Service Sheets. 8½ x 11 in. Illustrated. Working drawings of construction, with standard specifications for design and construction of same.

Philip Carey Co., The, Cincinnati, Ohio.
Architects Specifications for Carey Building Material. 8½ x 11 in. 48 pp. Illustrated.

Johns-Manville, Inc., Madison Avenue and 41st Street, New York.
Johns-Manville Colorblende Asbestos Shingles. Booklet. 3½ x 6 in. 32 pp. Illustrated. Prices, construction data and specifications.
Johns-Manville Roofing and Building Materials. Catalog. 3½ x 6 in. 24 pp. Illustrated. Describes building materials such as asbestos wood, sound deadening and insulating felts, waterproofing, etc.

Ruberoid Co., The, (formerly the Standard Paint Co.), 95 Madison Avenue, New York, N. Y.
Instructions for Laying Built-up Roofs. Booklet. 8½ x 11 in. Illustrated.
Roofing Facts Worth Knowing. Booklet. 6 x 9 in. 16 pp. Illustrated.

N. & G. Taylor Company, 300 Chestnut Street, Philadelphia, Pa.
Selling Arguments for Tin Roofing. Booklet. 6¼ x 9¼ in. 80 pp. Illustrated. Describes the various advantages of the use of high grade roofing tin, gives standard specifications, general instructions for the use of roofing tin, illustrates in detail methods of application.

SEWAGE DISPOSAL

Kewanee Private Utilities, 442 Franklin St., Kewanee, Ill.
Specification Sheets. 7¾ x 10¼ in. 46 pp. Illustrated. Detailed drawings and specifications covering water supply and sewage disposal systems.

SHEATHING

Bishopric Mfg. Company, 103 Este Ave., Cincinnati, Ohio.
Homes Built on the Wisdom of Ages. Catalog. 6 x 9 in. 48 pp. Illustrated. Describing the use of Bishopric Stucco-Board and Bishopric Sheathing Board.

STANDARD BUILDINGS

Truscon Steel Co., Youngstown, Ohio.
Truscon Standard Buildings, 4th ed. Catalog. 8½ x 11 in. 40 pp. Illustrated. Erection details, cross-section diagrams and adaptations are given.

STONE, BUILDING

Harrison Granite Company, 200 Fifth Avenue, New York, N. Y.
Harrison Granite Company, Clientele. 3¾ x 8¾ in. 24 pp. Illustrated. A partial list of clients with illustrations of examples of monuments and mausoleums.

Indiana Limestone Quarrymen's Association, Box 766, Bedford, Indiana.
Vol. 1. Indiana Limestone Library. 6 x 9 in. 36 pp. Illustrated. Giving general information regarding Indiana Limestone, its physical characteristics, etc.
Vol. 4. Indiana Limestone Bank Book. 6 x 9 in. 48 pp. Illustrated. Descriptive of the use of Indiana Limestone for bank buildings, with partial list of buildings in which it has been used.
Vol. 27. Designs for Houses of Indiana Limestone. 8½ x 11 in. 32 pp. Illustrated. Being the best designs submitted in competition for a detached residence faced with Indiana Limestone conducted by *The Architectural Review*.

National Building Granite Quarries Association, Inc., 31 State St., Boston, Mass.
Booklet. 8½ x 11 in. 16 pp. Illustrated. Contains nineteen color plates of standard American Building Granites; specifications; classification listing colors, textures, and producers; detail sheets illustrating relative value of mouldings, economical design and typical construction; a general description of granite including uses, finishes, tests, etc.

STORE FRONTS

Kawneer Co., The, Niles, Mich.
Kawneer Solid Copper Store Fronts. Catalog. "K." 8½ x 11 in. 32 pp. Illustrated. Information about various members used in the pioneer Kawneer construction.
A Collection of Successful Designs. Catalog. 9¼ x 6½ in. 64 pp. Illustrated. Showing by use of drawings and photographs many types of Kawneer Solid Copper Store Fronts.

Zouri Drawn Metals Co., B. J. 10, Chicago Heights, Ill.
Architects' Catalog. 8¾ x 11¾ in. 86 pp. Illustrated. Showing a true copy of the approval of the Underwriters' Laboratories. Showing a proper glazing specification, based on the Underwriters' Report.
Catalog B. J. 8. 6 x 9 in. 68 pp. Illustrated. Key to Getting the People In.

STUCCO, MAGNESITE

American Materials Company, 101 Park Avenue, New York; Weed Street and Sheffield Avenue, Chicago, Ill.
Elastica, the Stucco of Permanent Beauty. Catalog. 8½ x 11 in. 32 pp. Illustrated. Treatise on composition and application of Elastica Stucco.

Muller, Franklyn R. Co., Waukegan, Ill.
Everlastic Magnesite Stucco. Booklet. 8½ x 11 in.

United States Materials Co., Weed Street and Sheffield Avenue, Chicago, Ill. See American Materials Co.

STUCCO BASES

Bishopric Manufacturing Co., 103 Este Avenue, Cincinnati, Ohio.
Homes Built on the Wisdom of Ages. Catalog. 6 x 9 in. 48 pp. Illustrated. Describing the use of Bishopric stucco board and Bishopric sheathing board.

TERRA COTTA

Atlantic Terra Cotta Co., 1170 Broadway, New York, N. Y.
Questions Answered. Booklet, 7½ x 5¼ in. 32 pp. Illustrated.

National Terra Cotta Society, 1 Madison Avenue, New York, N. Y.
Standard Construction, Indexed, bound volume. 10½ x 16 in. 90 pp. 70 Illustrations. Standard forms of terra cotta construction with short article.
"The School." 10½ x 13½ in. 34 pp. 92 Illustrations. Types of school buildings with short descriptive articles. Volume I, brochure series.
"The Theatre." 10½ x 13½ in. 36 pp. 102 Illustrations. Types of theatre buildings with short descriptive articles. Volume II, brochure series.
"The Store." 10½ x 13½ in. 34 pp. 60 Illustrations. Types of store buildings with short descriptive articles. Volume III, brochure series.

Northwestern Terra Cotta Co., The, 2525 Clybourn Ave., Chicago, Ill.
Booklet. 8½ x 11 in. 77 pp. Illustrated. Showing in a concise way the usefulness of terra cotta.

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TILE, FLOOR AND WALL

Associated Tile Manufacturers, The, Beaver Falls, Pa.
Bring the Crowds to Your Market. Booklet. 8½ x 11 in. 16 pp. Illustrated. The use of Tile for the modern sanitary market.
Swimming Pools. Booklet. 8½ x 11 in. 32 pp. Illustrated. A handbook on swimming pools and their construction.

Norton Company, Worcester, Mass.
Alundum Safety Tile. Booklet. 5 x 8 in. 15 pp. Illustrated. Description of material and its installation.
Tests of Alundum Tile. Booklet. 5 x 8 in. 18 pp. Illustrated. Describes its composition and proves its adaptability for its innumerable purposes.

TILE, HOLLOW

Hollow Building Tile Association, Dept. 1812, Conway Bldg., Chicago, Ill.
Handbook of Hollow Building Tile Construction. 8½ x 11 in. 104 pp. Illustrated. Complete treatise on most approved methods of hollow tile building construction and fireproofing.

National Fire Proofing Co., 250 Federal St., Pittsburgh, Pa.
Standard Wall Construction Bulletin 174. 8½ x 11 in. 32 pp. Illustrated. A treatise on the subject of hollow tile wall construction.
Industrial Housing Bulletin 172. 8½ x 11 in. 14 pp. Illustrated. Photographs and floor plans of typical workingmen's homes.
Natco on the Farm. 8½ x 11 in. 38 pp. Illustrated. A treatise on the subject of fire safe and permanent farm building construction.
Fireproof Buildings of Natco Hollow Tile. Booklet 8½ x 11 in. 16 pp. Illustrated. Showing the use of Natco Hollow Tile for private residences.

VALVES

Crane Co., 836 S. Michigan Ave., Chicago, Ill.
No. 50 Steam Pocket Catalog. 4 x 6½ in. 775 pp. Illustrated. Describes the complete line of the Crane Co.

Jenkins Bros., 80 White Street, New York.
The Valve Behind a Good Heating System. Booklet. 4½ x 7¼ in. 16 pp. Color plates.
Jenkins Valves for Plumbing Service. Booklet. 4½ x 7¼ in. 16 pp. Illustrated.

SELECTED LIST OF MANUFACTURERS' PUBLICATIONS — *Continued from page 87*

VALVES — Continued

Warren Webster & Co., Camden, N. J.
The Webster Type N Modulation Valves. Catalog. 8 x 10½ in. 8 pp. Illustrated. Describing a quick response, conveniently operated, and simple radiator supply valve.
The Webster Sylphon Trap. Booklet. 8 x 10½ in. 12 pp. Illustrated. Explaining the importance of the properly operating radiator return trap.

VENTILATION

American Ventilating Company, The, Martin Bldg., Pittsburgh, Pa.
Adequate Ventilation. Catalog. 8¼ x 10¾ in. 24 pp. Illustrated. Explaining the fundamentals of proper ventilation. Methods of determining number and size of ventilators.
American-Larson Suction Ventilators. Catalog. 8¼ x 10¾ in. 24 pp. Illustrated. Description contains valuable data on adequate ventilation. All construction details fully illustrated and described. Gives methods of determining number and size of ventilators required for a given job, also charts, giving dimensions and prices.
Globe Ventilator Co., Dept. P., Troy, N. Y.
Globe Ventilator's Catalog. 6 x 9 in. 32 pp. Illustrated.

WALL BOARDS

Carey Co., The Philip, Cincinnati, Ohio.
Carey Board for Better Building. Catalog. 6 x 9 in. 32 pp. Illustrated.

WATERPROOFING

Minwax Company, Inc., 18 East 41st Street, New York, N. Y.
Waterproofing Exposed Walls. Bulletin No. 22. 8½ x 10 in. 12 pp. Illustrated. Descriptions and specifications dealing with two methods of dampproofing above grade walls, viz., Minwax clear waterproofing or Minwax brick and cement coating, and Minwax asphaltic dampproofing No. 300.
Products Bulletin. 8½ x 5½ in. 24 pp. Illustrated with drawings. Condensed catalog of Minwax products for standardized structural protection.
Ruberoid Co., The, 95 Madison Ave., N. Y.
Impervite. Circular. 8½ x 11 in. 4 pp. Illustrated. An integral waterproofing compound for concrete, stucco, cement, mortar, etc.
Toch Brothers, 320 Fifth Ave., New York, N. Y.
Toxement. Booklet. 5¼ x 8½ in. Illustrated. 24 pp. Describes Toxement, an integral waterproofing compound for concrete, stucco, cement, mortar, etc.

WATERPROOFING — Continued

Truscon Laboratories, The, Cor. Caniff Avenue and Grand Trunk R. R., Detroit, Mich.
Science and Practice of Integral Waterproofing. Pocket size. 33 pp. Illustrated.
Contains full specifications for waterproofing MASS Concrete, stucco and Cement Plaster Coat. Entire chapter devoted to "Practical Application of Waterproofed Cement Plaster Coat."
Technical Pamphlet # 8. Booklet. 4 x 7 in. 28 pp. A discussion of why concrete requires waterproofing and the properties an integral waterproofing must possess to operate effectively with the natural properties of concrete.

WATER SOFTENERS

Permutit Company, The, 440 Fourth Ave., New York, N. Y.
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WINDOW HARDWARE

Samson Cordage Works, Boston, Mass.
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L. P. T. Specialty Co., Madison Terminal Bldg., Chicago, Ill.
Details and Specifications for Counter Balanced Window Hardware. 8½ x 11 in. Illustrated with drawings and blue prints.
Smith & Egge Mfg. Co., The, Bridgeport, Conn.
Catalog No. 10. 6¾ x 9 in. 42 pp. Illustrated. Covers a complete line of chains, hardware and specialties.

WINDOWS, CASEMENT

Crittall Casement Window Co., 2703 East Atwater Street, Detroit, Mich.
Catalog No. 18. 9 x 12 in. 56 pp. Illustrated.
Detroit Steel Products Co., 2055 East Grand Bldg., Detroit, Mich.
Windowalls—Their Cost and Advantages. Catalog. 8¼ x 5½ in. 32 pp. Illustrated.
Hoffman Mfg. Co., Andrew, 900 Steger Building, Chicago, Ill.
Hoffman Casements. Architects' Portfolio. 8½ x 11 in. Loose-leaf. Large scale working details for mill-work and installation.
F. S. Details 20 x 23 in. and 15 x 22 in. Working details for mill-work and installation.
Hoffman Casements Catalog. 7 x 8½ in. 16 pp. Illustrated.
Hope & Sons, Henry, 103 Park Avenue, New York.
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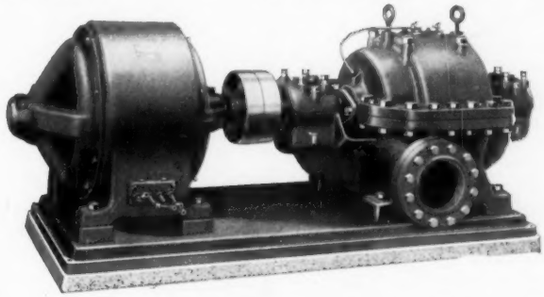
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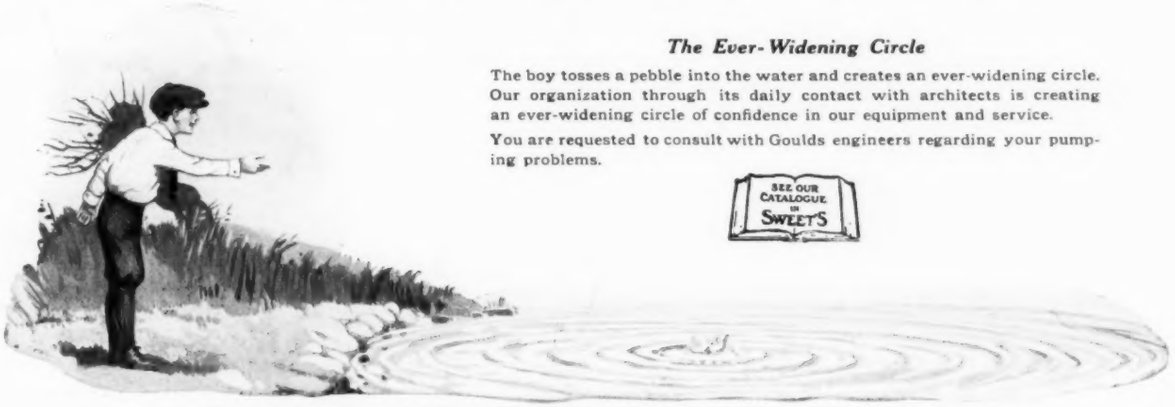
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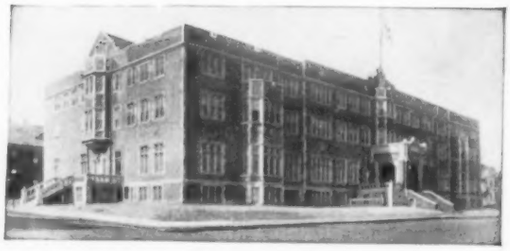
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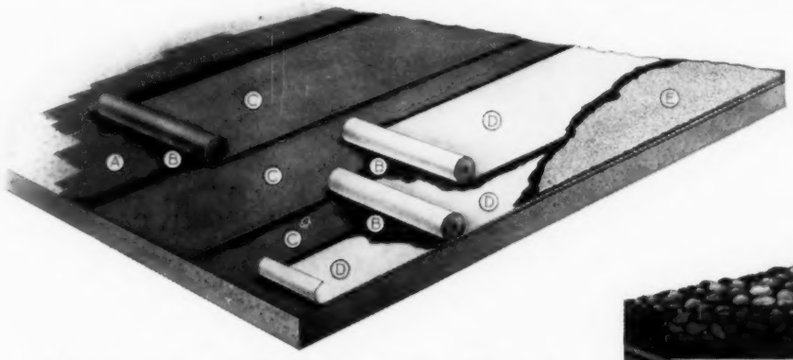
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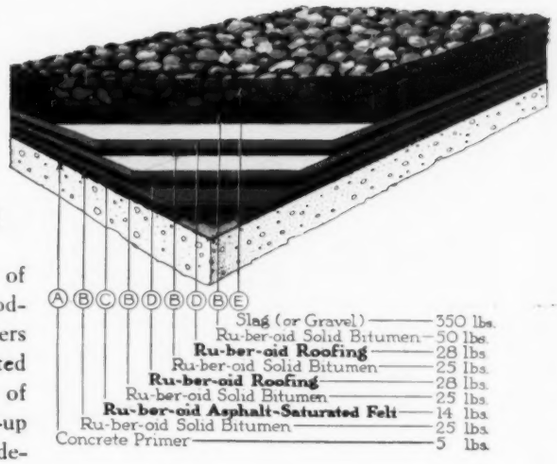
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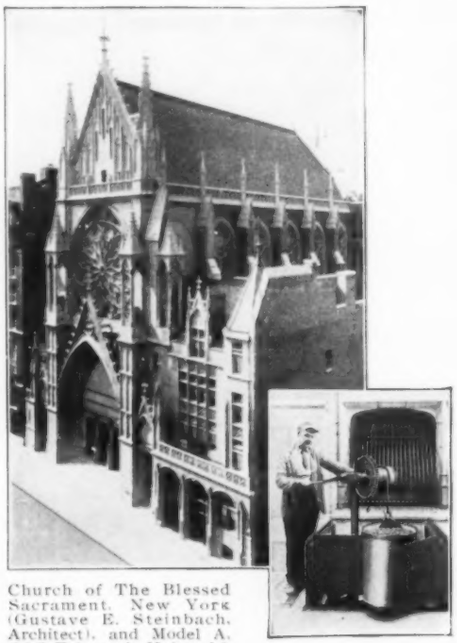
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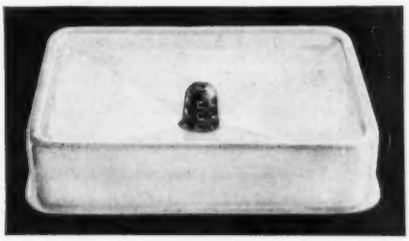


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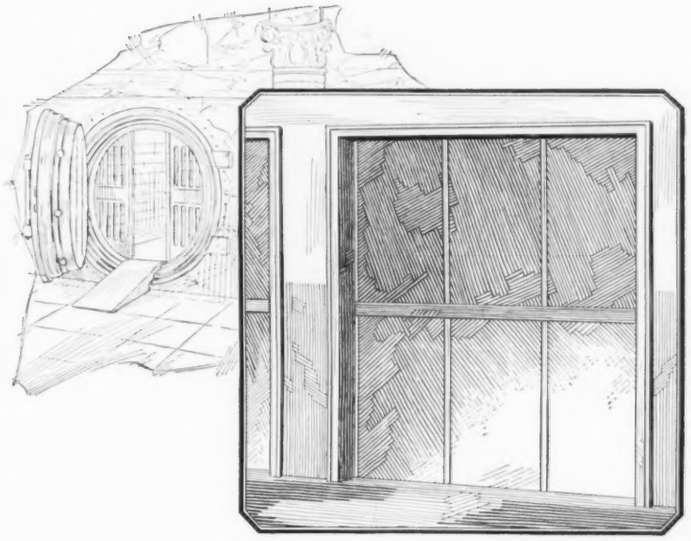
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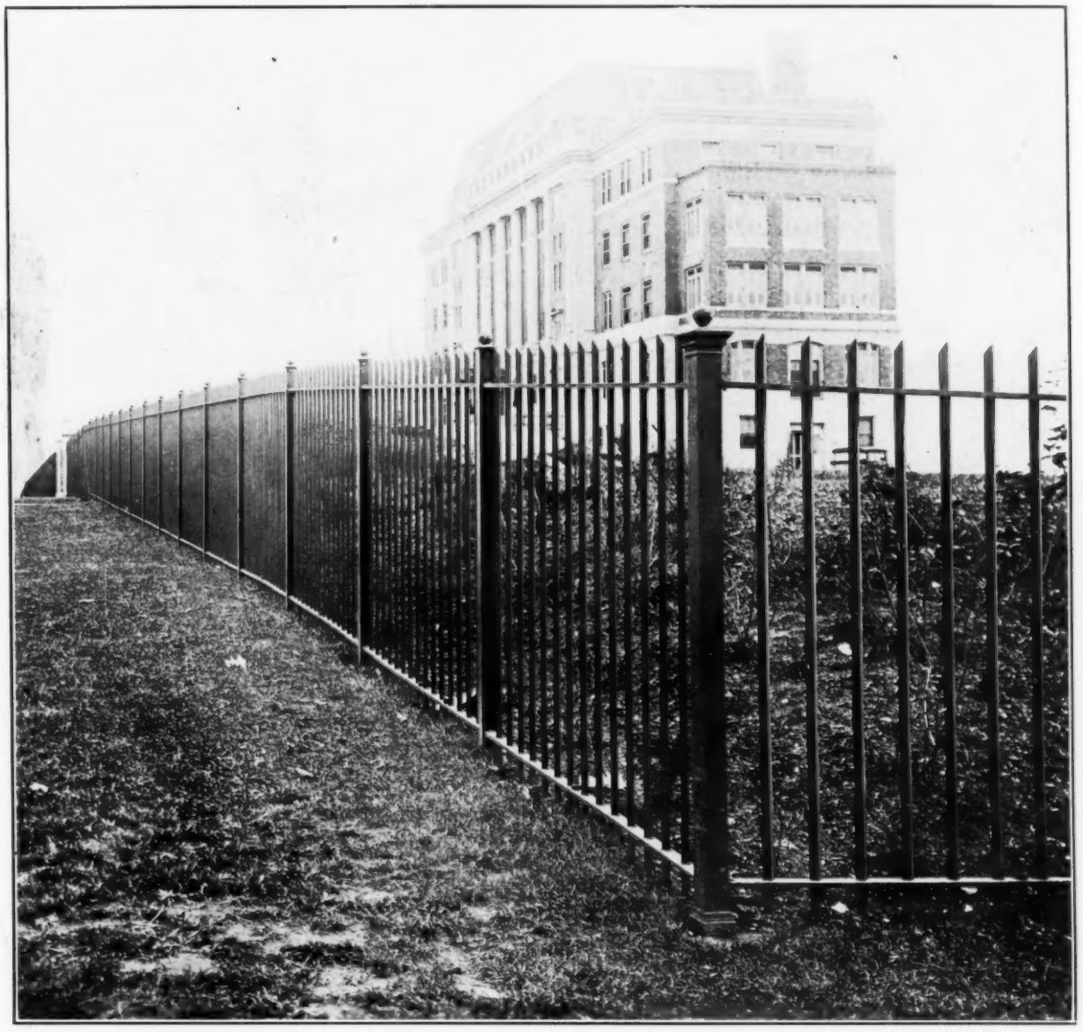
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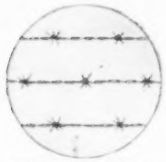
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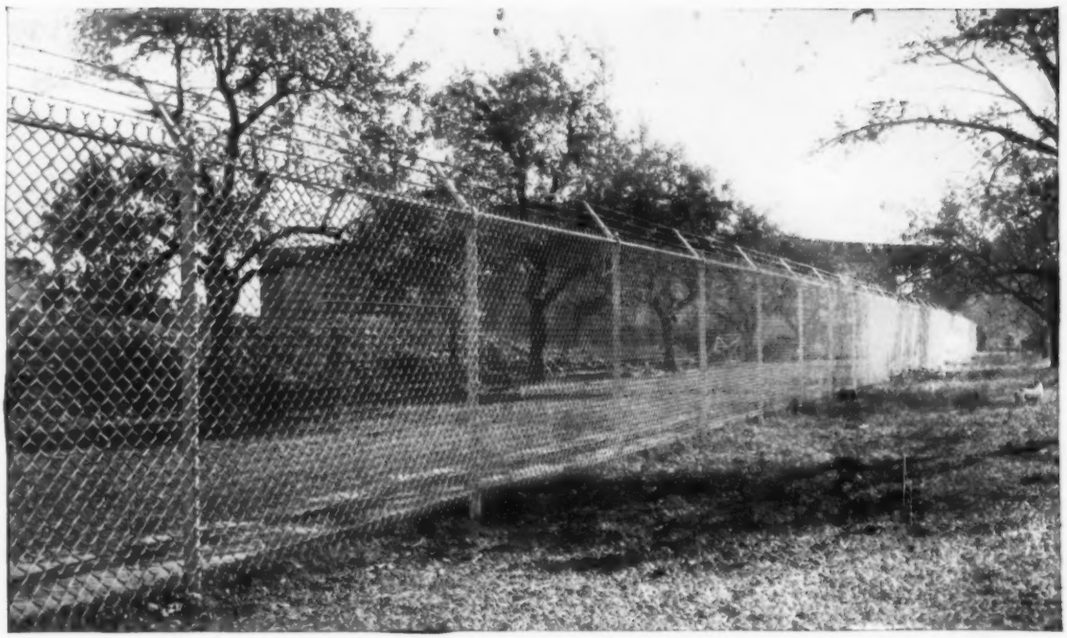
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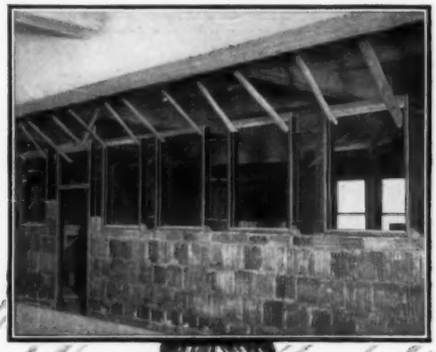
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Dahlstrom hollow metal doors and trim back up the other fireproof members. The Uni-tre metal frame is one of the units. In addition hollow metal affords beauty, sanitation and low upkeep costs.

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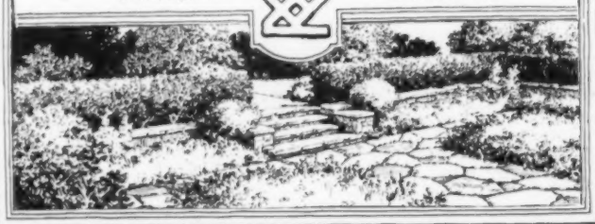


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Chicago Underwriters Develop Methods of Protecting Frame Homes.

FINAL TEST SATISFACTORY

Flame-Safe Plaster for Dangerous Spots Plan to Prevent Blazes.

A wooden house so constructed that it will be practically fireproof is being developed and tested at the Underwriter's Laboratories in Chicago

The possibilities of this development are tremendous. Instead of burning down a large part of the houses which are constructed every year, fire-safe construction, even with the ordinary wood joists and partitions, is seen. Only a few of the danger points need be given special attention.

It has long been the desire of the Underwriters to develop economical ways for protecting the lives and property of people and for a long time it was considered necessary to turn to other materials than wood, but these are found to be so much more expensive that while a great effort is being put upon advancing their use, the progress is slow and uncertain. As a result the Fire Marshals of the United States declare that 28,000 lives are sacrificed to the fire fiend every year. Underwriters are, therefore, seeking to develop a construction which will give a protection of an hour against any possible fire.

Difficult Engineering Feat.

To accomplish this is naturally a difficult engineering feat for even if the wood is kept from burning it will char and anything nailed into it will ultimately fall down. Therefore, a new system has been developed to avoid this difficulty and at no extra expense, the fireproofing covering of metal lath and plaster is held in place by wires surrounding the beams which continue to act even after the wood beams have started to char.

The preliminary test was held November 16, 1920, and gave indications of successful completion of the final test which was held March 30. On the former occasion, the fire was allowed to run for one hour and thirty-five minutes without smoke or flame passing through the floor [illegible]

Underwriters' Tests Prove This Possible by Protecting Vulnerable Points with Incombustible Plaster and

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ARCHITECTS realize that this scientific development means low cost, safe houses.

In the face of the housing shortage, the increasing fire loss and present cost of building, this is of such immense significance that the news was flashed over the country by the Associated Press, who ordered release of the story to the papers of April 14 and thereafter.

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Containing samples of different styles, weights and gauges of lath—just what you need in drawing your specifications. (Note: Because of the cost of these books applications must be on your business stationery.)

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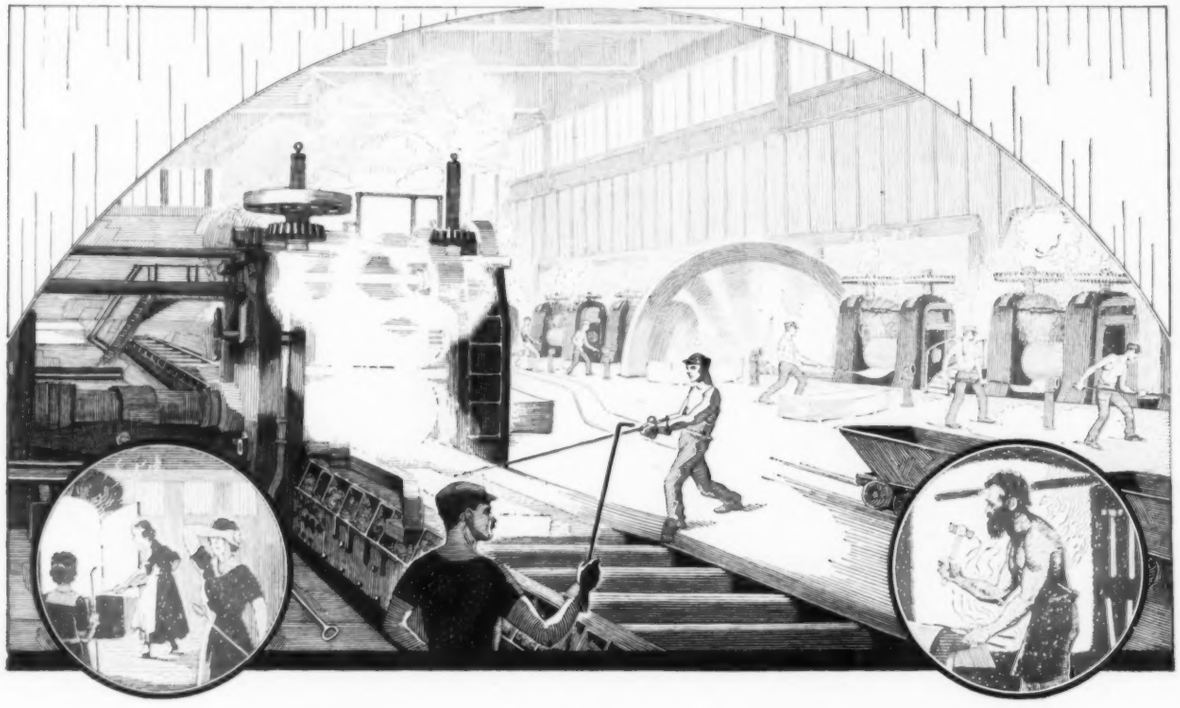


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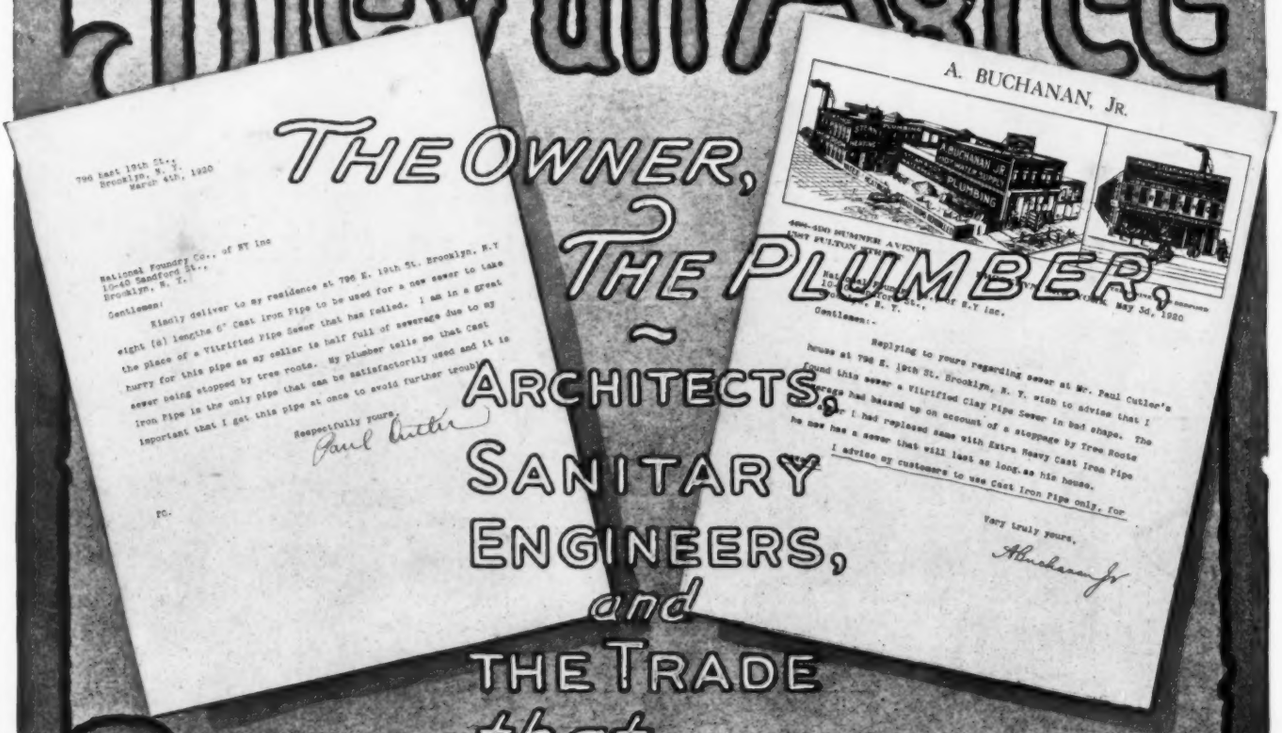
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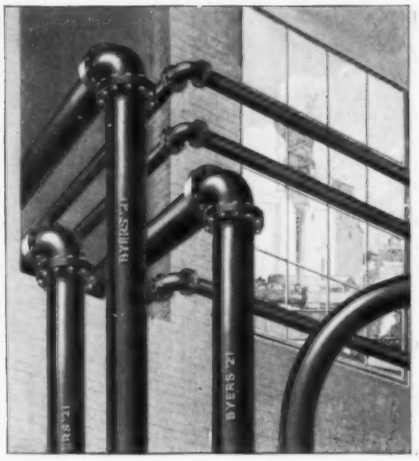
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See our exhibit at the American Hotel and Restaurant Equipment Exposition, July 11th to 16th, The Coliseum, Chicago, Ill.

WRITE— We Invite Correspondence
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The John Van Range Co.
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD
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CHICAGO CLEVELAND DETROIT



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GREAT FALLS, MONTANA

John Van Range Co.,
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Cincinnati, Ohio.

Gentlemen:-

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Just recently at the annual meeting of the Montana Hotel Men's Association which was held in Great Falls, the visiting hotel men were taken through this hotel and particularly complimented us on having such a splendidly arranged kitchen and such good equipment.

If we can co-operate from any other standpoint please remember that we will be more than willing.

Yours very truly,

Van's installed the Culinary Equipment in Hotel Rainbow
Great Falls, Montana

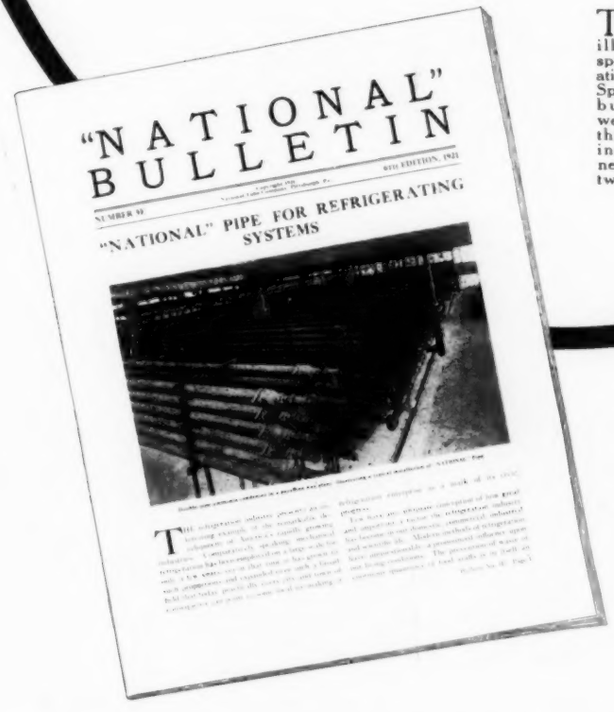
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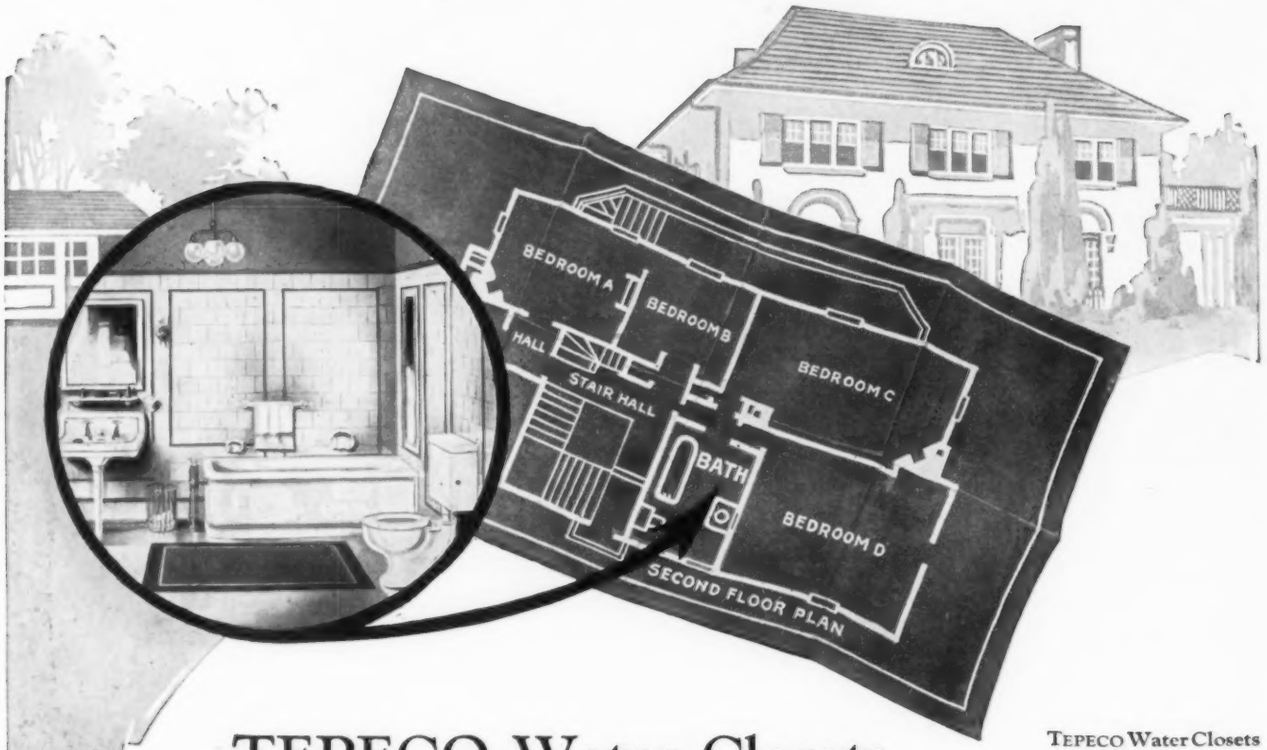
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We assume that everyone's natural inclination would be to install the Silent Si-wel-clo in their house. Unfortunately, we cannot manufacture this toilet at a price within the means of everybody. But we always have made other closets. "Why not," thought we a couple of years ago, "perfect one closet of each type as it has never been perfected before, so that people who cannot afford a Si-wel-clo can be assured of getting the best value for their money."

We have done it. You can either take our word for it or get out a measuring tape and make your own comparisons. Each in its class and at its price—Si-wel-clo, Welling, Merit and Saxon—satisfies us. In design, sanitary qualities, china tank and fittings—we are proud of them.

So we have named each one of them, priced them F. O. B. Trenton, and have placed them in the hands of the plumbing contractors awaiting your call. We lay no claim to attempting to turn out cheap water-closet combinations, but we do say that they are the nearest thing to "no trouble" you can buy, and you will find a reputable manufacturer in back of them.

BOOKLETS—So that you may learn why some closets cost more than others, we have prepared booklets showing the difference between the types. We want you to send for them, also for our bathroom plan book—"Bathrooms of Character," Edition A.

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WELLING The Welling is a syphon jet, the same as the Si-wel-clo, but does not include its noiseless feature. For many years the Welling has been considered by sanitary experts as the outstanding example of fine syphon-jet construction.

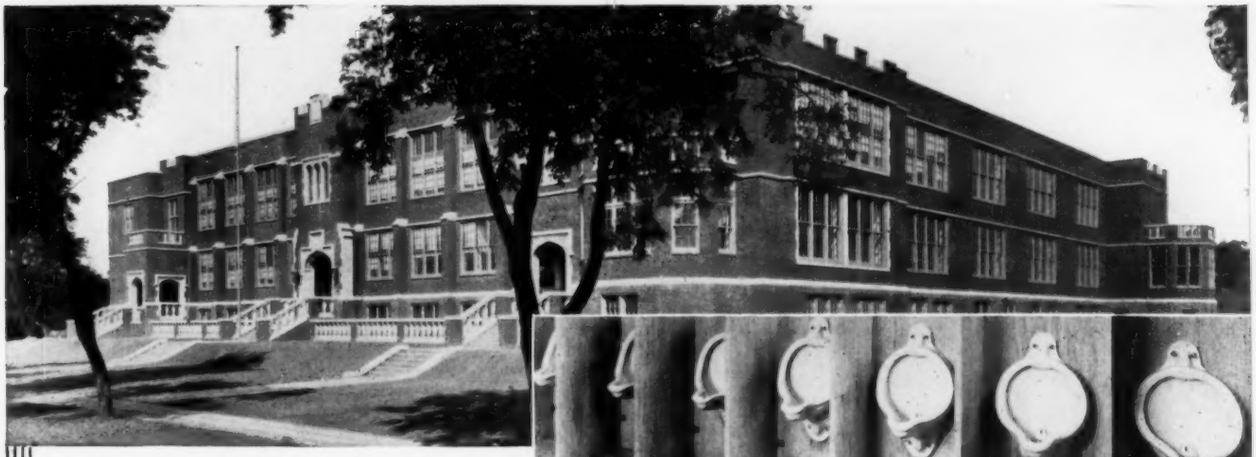
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We are manufacturers of about 20,000 articles, including valves, pipe fittings, and steam specialities, made of brass, iron, ferrosteel, cast steel and forged steel, in all sizes, for all pressures and all purposes, and are distributors of pipe, heating and plumbing materials.

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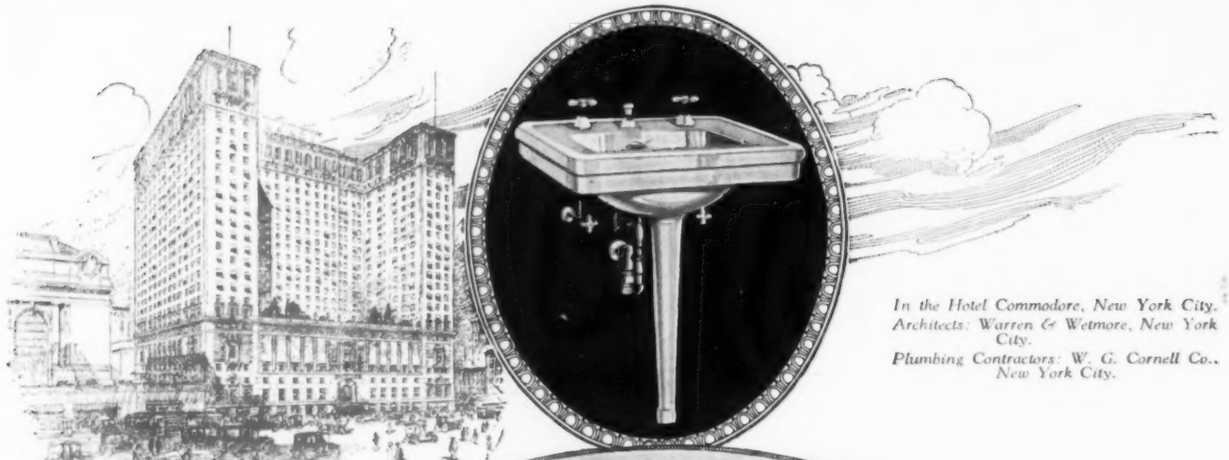
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In the Hotel Commodore, New York City.
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MADDOCK

The advantage of first-cost, last-cost plumbing equipment

To have the plumbing equipment harmonize with its many other quality appointments, the Hotel Commodore, New York's newest hostelry, was equipped with Thomas Maddock fixtures.

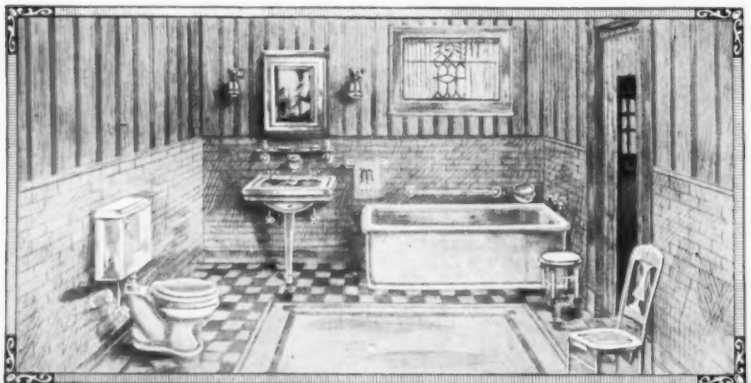
Maddock sanitary fixtures are made of hard-body, practically unbreakable vitreous china which gives years and years of service *without* the "after-costs" of frequent repairs. That is why Maddock fixtures are known as "first-cost, last-cost" plumbing equipment.

Architects who do not have a complete file of Maddock literature on hand should write for our architect's catalog which describes the Maddock equipment designed for domestic, medical, public building and various other special requirements.



See our section in the Fourteenth Annual Edition of Sweet's Catalog, pages 1037 to 1044.

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OLDEST - SANITARY - POTTERS - IN - AMERICA — ESTABLISHED 1859
Manufacturers of sanitary earthenware plumbing fixtures for bath, kitchen and laundry needs in the home; also sanitary ware for medical, industrial, commercial and public building installations
Branches: New York – Philadelphia – Chicago – San Francisco – St. Louis



The fixture shown above is the **Madbury** *— a one-piece, vitreous china lavatory of the center leg support type with integral supply nozzle and overflow cleansing device, both exclusive Maddock features.*

The valve handles and other slab fittings are also made of vitreous china, which eliminates the care required to keep ordinary metal parts clean.

This lavatory may also be furnished with pedestal, instead of center leg support, when so desired.

M First in the industry — foremost since M



Hotel Wolverine, Detroit, Mich.: National Plumbing and Heating Supply Co., Chicago, Jobbers; W. G. Cornell Co., Plumbers; G. H. Gottschalk Co., Architects

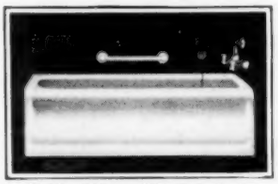
KOHLER

And HOTEL WOLVERINE

The skyline of Detroit—the world's automobile capital—has an attractive addition in the new, sixteen-story Hotel Wolverine. And here, in keeping with the high type of its guests, are 433 Kohler Enameled "Viceroy" Built-in Baths. For the glistening snow-white enamel of Kohler Ware is easily cleaned, is durable, and its lasting beauty appeals to the guest and the hotel owner alike.

* * *

Our handbook, "KOHLER of KOHLER," illustrating and describing Kohler Enameled Plumbing Ware, contains information of interest to architects. We shall be glad to send a copy on request.



Kohler "Viceroy" Built-in Bath
Recess Pattern

KOHLER OF KOHLER

Kohler Co., *Founded 1873*, Kohler, Wisconsin
Shipping Point, Sheboygan, Wisconsin

BRANCHES IN PRINCIPAL CITIES

MANUFACTURERS OF ENAMELED PLUMBING WARE AND KOHLER AUTOMATIC POWER AND LIGHT 110 VOLT D. C.

Dramatized Facts out of The Day's Work
No. 4

Where the facts came from

Building the new New England Oil Corporation plant at Fall River, Mass., was a rush job from the first day. 68 miles of piping, covering 55 acres, were installed by Grinnell Company for the contractors, Unit Construction Co., St. Louis. When the piping was tested with men stationed all over the great works, only six leaks were reported to Mr. W. W. Boyd, Jr., Vice President and General Manager of the New England Oil Corporation — six leaks from 64,332 joints.





55 Acres of Borrowed Trouble

"The first tanker will dock here in just four months," declared the President, looking across the fifty-five-acre site of the gigantic new oil works. "By then we simply must be in full running order."

"The piping is what I'm worried about," mused the Production Manager, half to himself.

"It can't be done," exclaimed the Plant Engineer, whose hobby was his record under Goethals. "You've no idea how many unlooked-for things can come up in a job like this. No one ever dreamed of a whole hill sliding into the Panama Canal at Culebra Cut. Why, there's actually more than 68 miles of piping required here."

"I don't care if there's a hundred and sixty-eight, or if the Canal did fill up," flashed the President, "this job's got to go through on schedule, and it's going!"

"But in sixty-eight miles of this kind of piping," the Plant Engineer came back, "there are high and low pressure steam lines, acid, air and water lines, besides all the miscellaneous connections to stills, coking plants—why there must be over fifty thousand joints of one kind and another to make trouble."

The Consulting Engineer turned—started to reply. But again the President broke in with—"It can't take more than four months, remember—it simply can't."

"All right," persisted the Plant Engineer, "but if you rush construction like that, you can figure on giving me a big repair gang to tighten acres of leaky joints after the construction army is gone—"

"You're borrowing trouble, old man," smiled the Consulting Engineer. "I'll bet you a suit of clothes there won't be a hundred leaks in the whole job when it's tested out."

"Only a hundred leaks in 68 miles of rush, overtime piping? I'll go you."

It was hardly a fair bet for the Consulting Engineer to make. He knew where he was going for his piping—knew he would get a service practically undreamed of by those who haven't had actual experience with Grinnell Company. His confidence wasn't misplaced. The job was done on time, and after the test only six workmen came in and reported leaks. He won his suit of clothes with ninety-four leaks to spare!

GRINNELL BULLETIN

Handling a great piping contract requires skilled erecting crews, working in groups under unit foremen with a resident foreman supervising. The Grinnell field organization of 1300 men can give such service anywhere in the country. Piping requires more than ideas and materials. It requires men, organized like an army to take orders and execute them quickly.

This is why Grinnell Company can guarantee any piping installation it undertakes.

Send for your copy of the "Grinnell Bulletin." Address Grinnell Company, Inc., 285 West Exchange Street, Providence, R. I.

GRINNELL
INDUSTRIAL PIPING
Automatic Sprinkler Systems, Heating, Power and Process Piping
Your kind, their kind, every kind of Piping

A Consultant-Manufacturer must have—

1. Standards of scientific service.
2. Laboratory facilities and a record for research work and experimentation.
3. Ability to supply engineering application with his product to meet any and all conditions.
4. The dual responsibility as manufacturer of the product and as contractor for its installation.
5. Ripe experience—but never at the expense of progressiveness.
6. Size—for the moral support it gives when high standards in materials and installation are in competition with lower standards and prices.
7. Resources in men and materials to meet emergencies.
8. Reputation—not only of quality but quantity (see opposite page).

On the basis of these eight factors Grinnell Company invites your consideration in the field of Industrial Piping.

2. "Laboratory Facilities and a Record for Research Work and Experimentation."

THE brilliant feats through which "genius" manifests itself are regarded either as inspirations or as lucky thoughts playing hand-in-glove with expediency.

But it has been said—and very truly—that genius is an infinite capacity for taking pains. There is not one instance out of the many notable piping installations wherein Grinnell Company has overcome "engineering impossibilities" that can justly be ascribed to anything but this same "taking pains."

Grinnell Company maintains the only really well-equipped laboratory on Industrial Piping. In this laboratory, research experts—with their working fund of Grinnell's 68 years of experience—have transmuted a trade into an exact science. Here theories have become principles; ideas, facts.

Thus, on one installation means was found to heat three buildings with boilers and fuel formerly inadequate to heat one. On another—as reported on the opposite page—an enormous installation of 68 miles of oil, steam, water and gas piping was finished and the plant operating in just four months. On another, Grinnell Engineers pointed the way to heat 500,000 square feet of floor space by utilizing exhaust steam hereto wasted.

These are three instances out of many equally distinguished performances of Grinnell piping installations. Don't they demonstrate laboratory facilities and a research record of the caliber you would wish to have at the disposal of your clients?

GRINNELL COMPANY

CONSULTANT-MANUFACTURERS IN INDUSTRIAL PIPING

To acquaint yourself with our qualifications not only as manufacturers and assemblers, but as sub-contractors and engineers for all kinds of Industrial Piping, write or telephone the nearest of the following offices:

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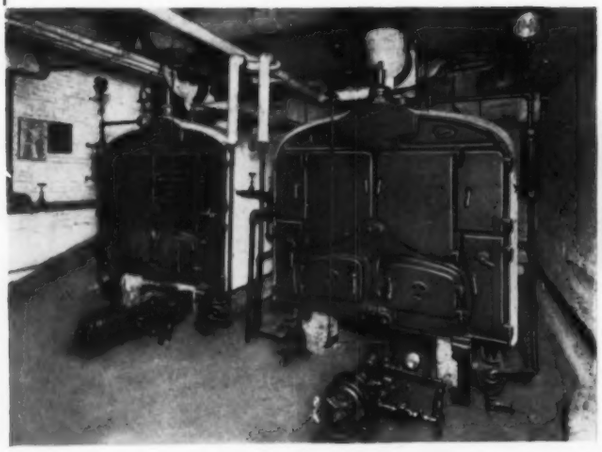


The Home of Francis J. Oaks, Jr., in Brookline, Massachusetts

Bigelow & Wadsworth, Architects H. E. Whitten, Heating Engineer

MR. OAKS' home is heated by No. 44 Mills Boilers equipped with the Fess System for oil burning. It is seldom necessary to operate more than one boiler.

A picture of part of the boiler room is shown.



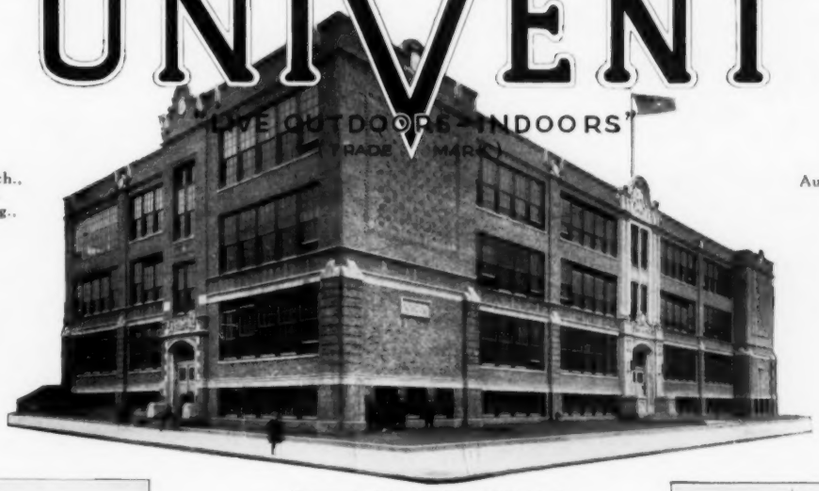
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Investigate the Univent system and the reason becomes easily obvious—the system eliminates big, space-wasting flues and ducts; it enables you and your client to turn the basement over to a gymnasium, classrooms, laboratories, to a dozen different purposes.

It reduces the cost of building many dollars—minimizes fire hazards—is the simplest, most practical, economical and wholesome system designed.

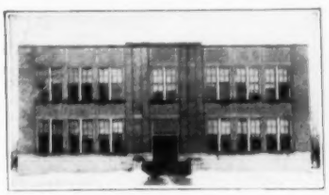
BEFORE PLANNING

write for our catalog and engineering data book which gives the full story of the Univent. Address Dept. C.

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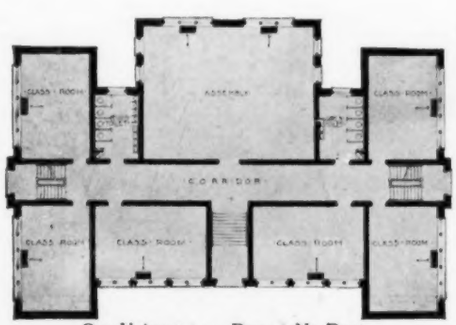
Grade School, Creston, Ia.
Wm. Gordon, Arch., Des Moines, Ia.
R. C. Willbee & Son, Cont., Creston, Ia.



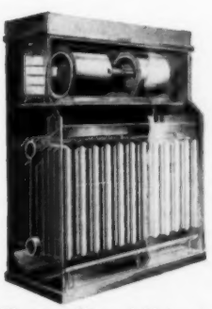
Grade School, Rexburg, Ida.
C. A. Sundberg, Arch., Rexburg, Ida.
A. H. Nelson, Cont., Rexburg, Ida.



Washington School, Rock Island, Ill.
Cervin & Horn, Arch., Rock Island, Ill.
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One Univent to a Room—No Ducts



Phantom View of Univent



Classroom Showing Univent Installation—Note Size

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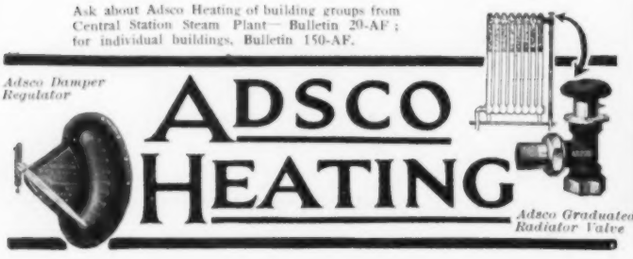
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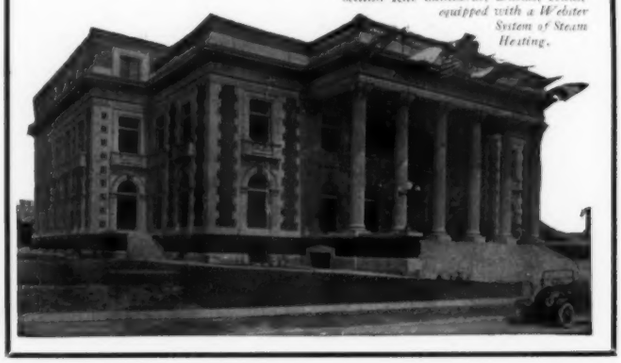
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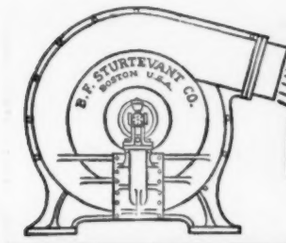
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Our many years of experience in designing schoolhouse equipment offer architects a guarantee of dependable and expert advice. We maintain offices in twenty-four cities where qualified engineers are available for the consideration of your problems.



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THE experimenting which determined the principle of the Dunham Radiator Trap ended twenty years ago. Refinements in its appearance have, of course, been made since it was placed on the market, but improvements here and there have only accentuated the ideal principle on which it operates.

The basic principle of the Dunham Radiator Trap is one involving the laws of thermodynamics. The permanency of this principle makes unnecessary any juggling with the purely mechanical side of the trap.

Permanency in mechanical construction is vital also. The best proof we know of is that furnished by eighteen year old Dunham Traps operating today, with promise of keeping at it indefinitely. Much of that can be credited to the honest craftsmanship of eighteen years ago—and to this standard we adhere today, in what is said to be one of the finest industrial plants west of the Mississippi.

In specifying Dunham Radiator Traps and other Dunham products, you place your confidence in standards that have matured, that will never be sacrificed to commercial expediencies.

Full details of the Dunham Trap, and twelve other Dunham specialties, are given in the fifteenth edition of Sweet's Index, pages 1404 to 1409.

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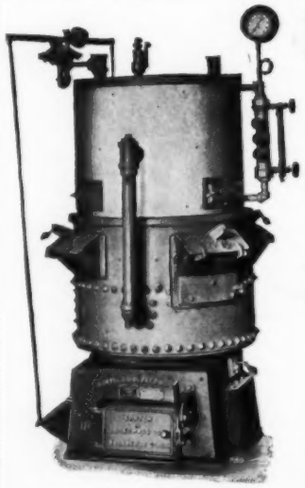


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are simple in construction yet made with utmost skill and care from highest grade material. They are simple to install—no complicated fitting of parts. They are simple in operation because they take advantage of a Natural Law, requiring no artificial stimulus whatever.

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of the **Gorton Self-Feeding Boiler** is demonstrated by the fact that many of the boilers installed over 25 years ago are still in use giving entire satisfaction.

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The **Gorton Self-Feeding Boilers** are built on the lines of Power Boilers, using the same material, thus securing the greatest Strength, Durability, and highest Efficiency.

The **Gorton Self-Feeding Boiler** gives a steady heat with attention only morning and night; its construction insures complete combustion of the gases and prevents the waste of coal.

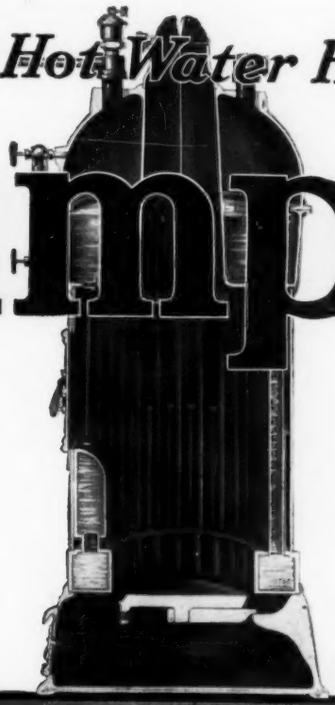
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"Triumph" Boilers & Hot Water Heaters



These heaters are in successful use for heating water in residences, apartments, hotels, barber shops, swimming pools, public institutions, etc. They can also be used for heating radiation.

As Coal Has Risen in price and become more difficult to obtain, the demand for boilers and hot water heaters that would be economical of fuel and easy to operate, has greatly increased.

That is one reason for the increasing popularity of our "Triumph" line of Boilers and Hot Water Heaters.

They are of the water tube type, thrifty of fuel, durable, safe, and rapid in operation. The illustration shows how every square foot of heating surface is so placed with respect to the fire as to be completely effective.

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HUMPHREY

AUTOMATIC GAS WATER HEATER

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American-Larson Suction Ventilators on Erie Malleable Iron Works, Erie, Pa.

Solves Your Most Difficult Ventilating Problem

NO matter how perplexing the ventilating problem with which you are confronted, you may always be *certain* of finding its satisfactory solution in the American-Larson Suction Ventilator. It is designed to meet the requirements of the most difficult installation and those of the comparatively simple type with equal success—from the standpoint of both ventilating effectiveness and convenience of arrangement, architecturally.

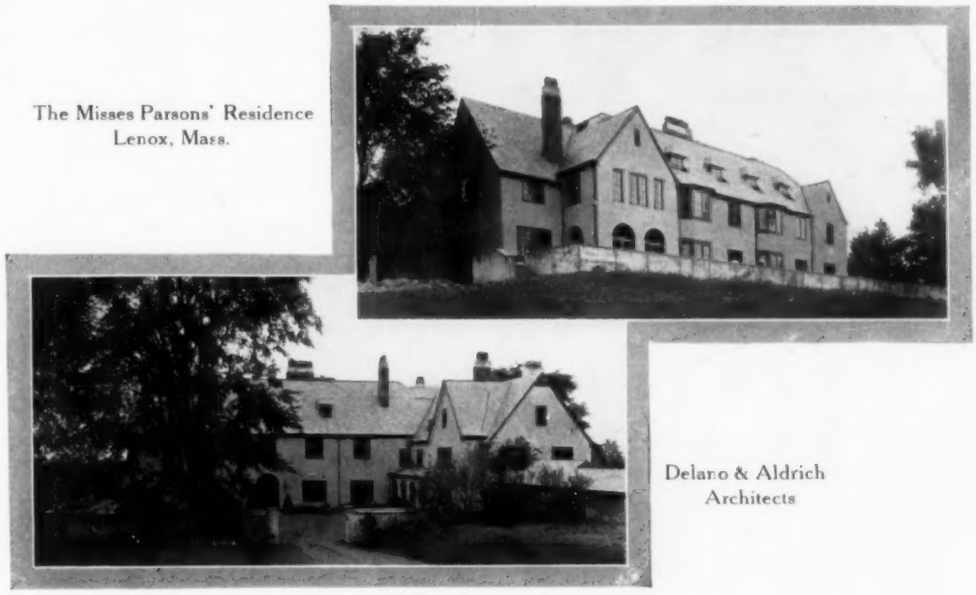
The American-Larson has practically *double* the exhaust capacity of any other suction ventilator. This means that *one* American-Larson Ventilator will do the work that would require *two* average ventilators of the same size. It means half the number of holes in the roof—half the obstruction to the air-line—half the number of ventilators to accommodate in your plans. It means half the expense to your client.

The American-Larson is the *only* suction ventilator which applies the siphon principle in a logical way. Its line of exhaust is *above* the horizontal. Resistance and friction are eliminated. Is as wide at the "throat" as it is at the "mouth." Suction force of outside air is unobstructed. Has nothing whatever to interfere with its discharge. Presents the suction *tube* directly to the air current at all times.

Complete construction details are given in our catalog which also contains standard specification form. Write Dept. "C" for a copy.

Martin Bldg. **The American Ventilating Co.** **Pittsburgh, Pa.**

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Lenox, Mass.

Delano & Aldrich
Architects

Kelsey Health Heat
Combines Ventilation With Heating

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The health value of a constant supply of warm, fresh air, as compared with the vitiated air re-heated by steam or hot water systems, cannot be denied. Then the Kelsey Humidifier (built into the dome of the Kelsey Warm Air Generator and automatically supplied with water from a small tank adjoining the heater) supplies a degree of moisture that is not only healthful but adds perceptibly to one's sense of comfort. Ventilation is secured by the removal of the used air through vents at the floor line.

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Our Engineering Department furnishes plans and specifications worked out in detail, insuring an installation that will accomplish exactly what is required

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KEWANEE

Grate Surface Properly Proportioned with Heating Surface

The grate and combustion chamber of a boiler *make* the heat—the heating surfaces *use* it by giving the water in the boiler a chance to absorb it.

So the heating surfaces must be big enough to allow *all* the heat manufactured in the combustion chamber to be absorbed by the water. If the heating surface is not properly proportioned with the grate a lot of the heat will be wasted up the stack.

All Kewanee Boilers are properly proportioned so that all of the heat can be absorbed by the water. That is another reason they are so easy on the coal bill.

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Steel Heating Boilers, Radiators, Tanks, Water Heating Garbage Burners

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Jenkins Brass Gate Valves

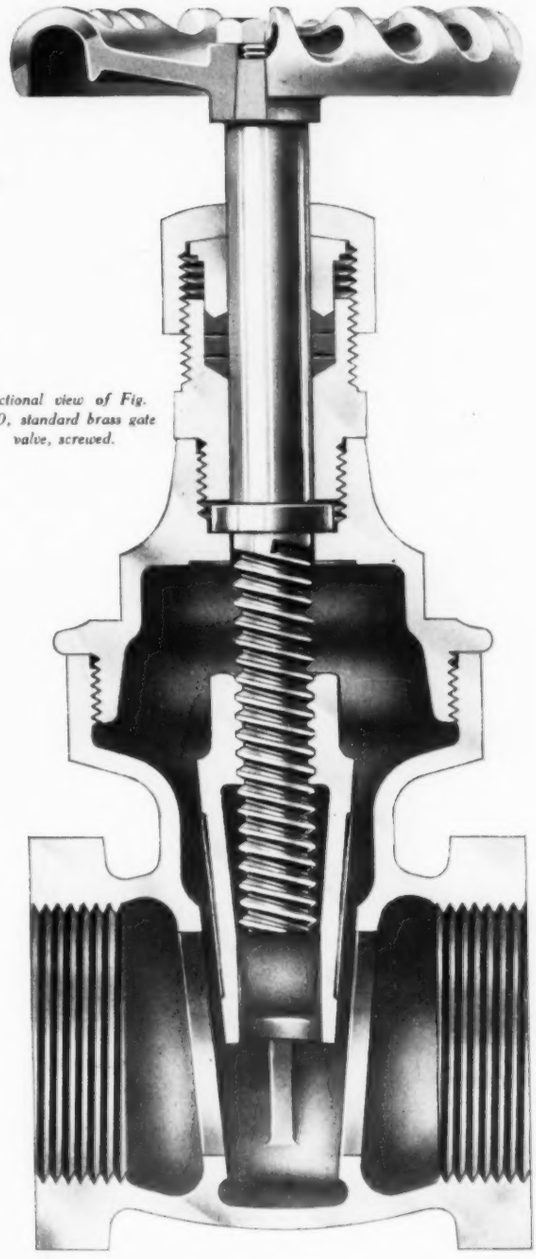
THE globe shaped body of Jenkins Brass Gate Valves is after a design that has proved practical and dependable. This shape insures the most perfect rigidity and resistance to the severe stresses to which these valves are subjected when in service. The good proportions, full opening and sturdy construction of these valves may be seen by the accompanying sectional view.

Valves have gland stuffing boxes and can be repacked when wide open and under pressure.

Valves are made screwed or flanged, and regularly furnished with malleable iron, non-heat hand wheels. Brass wheels, finished or plated or specially finished, can be supplied.

Valves shown below are Standard Brass Gate Valves suitable for working pressures of 125 pounds steam or 175 pounds water: Fig. 370, outside view of standard gate as shown by sectional drawing; Fig. 372, hose gate with screwed inlet, threaded on outlet for hose connection; Fig. 319, lock shield radiator gate with union; Fig. 368, gate outside screw and yoke. Jenkins Brass Gate Valves are also made in medium and extra heavy patterns for higher pressures.

Genuine Jenkins Valves are known by the Jenkins "Diamond Mark" and signature cast on the body.



Sectional view of Fig. 370, standard brass gate valve, screwed.

JENKINS BROS.

REG. U.S. PAT. OFF. TRADE JENKINS MARK

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Fig. 370



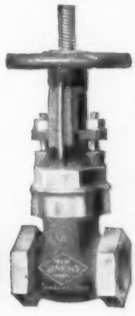
Fig. 372



Fig. 319



Fig. 368







Mantel by Arthur Todhunter

A Fireplace Fire that has been Tested and Tried Out

THE name "Radiantfire" carries with it the good will and confidence of consumers everywhere. It has proven its value in thousands of homes.

The growing demand for the Humphrey Radiantfire is established on the solid foundation of accomplishment.

Satisfy your clients and yourself by specifying the time-tried GENUINE HUMPHREY RADIANTFIRE.

Remember — if it isn't a Humphrey — it isn't a Radiantfire.

It is no experiment — it needs no introduction

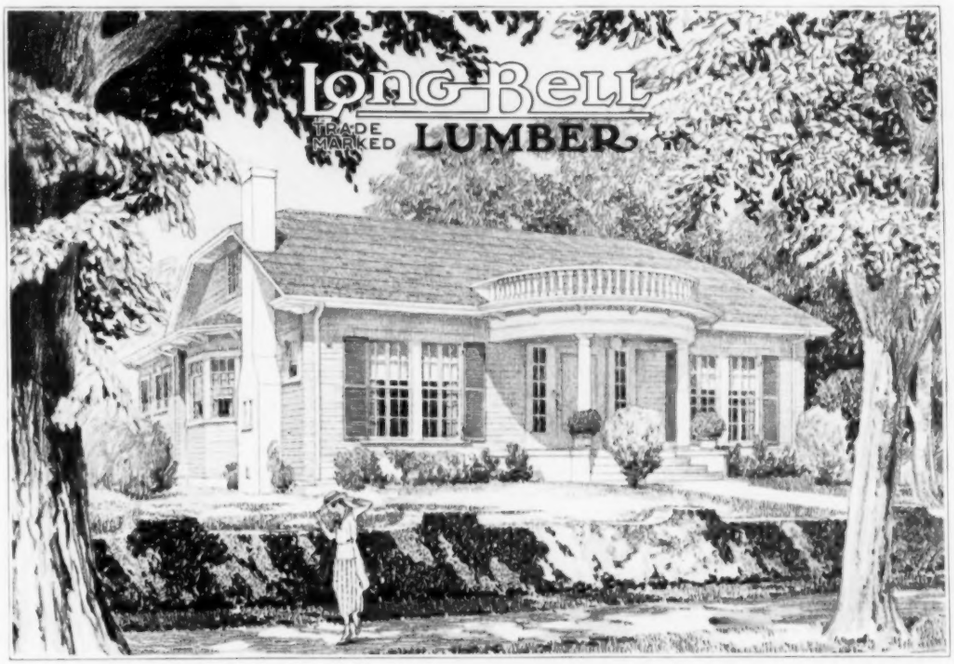
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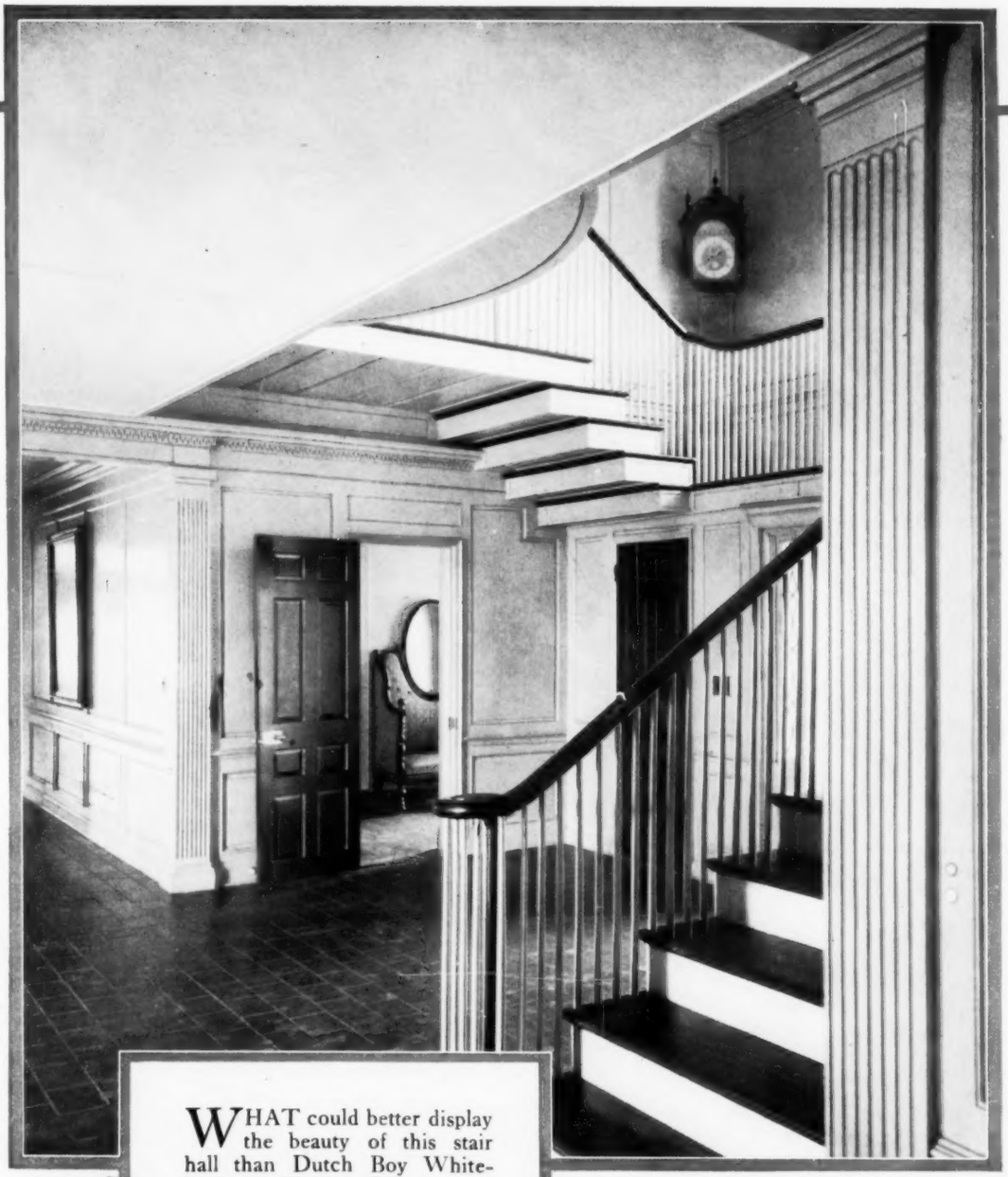
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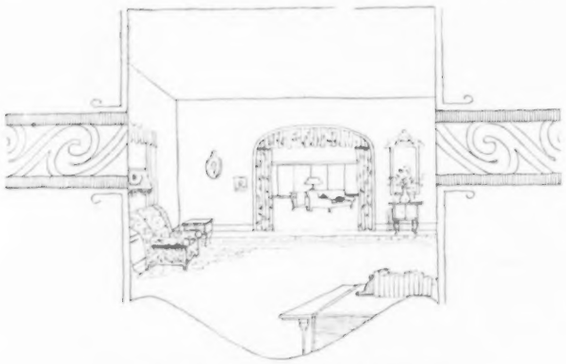
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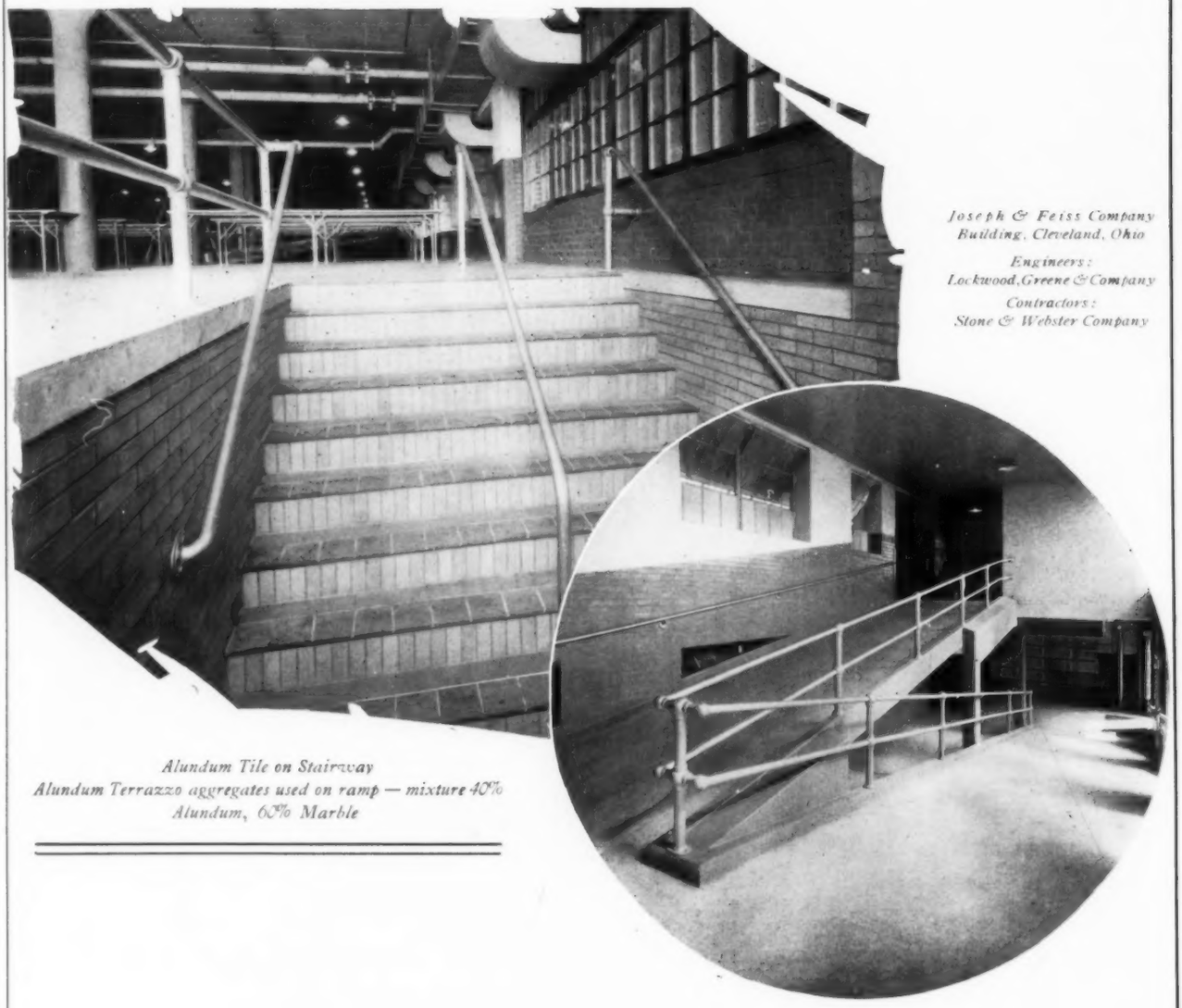
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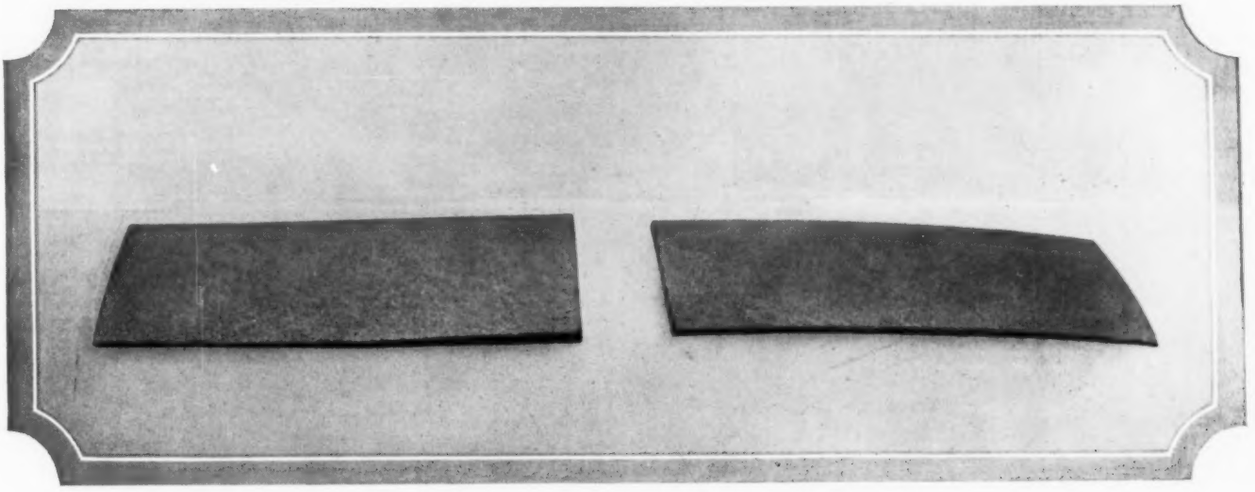
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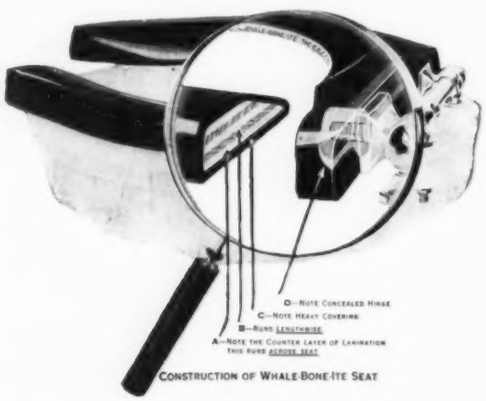


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